



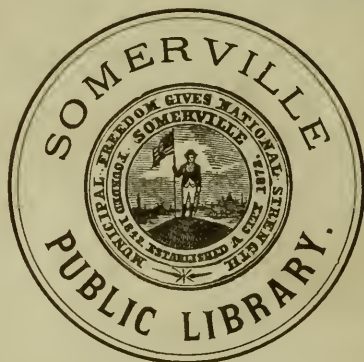
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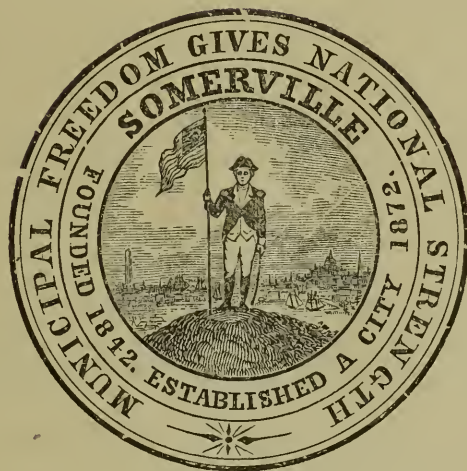
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CITY OF SOMERVILLE

ANNUAL REPORTS.



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ADDRESS OF MAYOR BRUCE.

INAUGURAL ADDRESS
OF HON. GEORGE A. BRUCE.

DELIVERED JAN. 6, 1879.

GENTLEMEN OF THE CITY COUNCIL:

I SHALL claim your attention for only a few moments, to present a brief statement of the condition of the city in its various departments, and some suggestions in regard to their management during the year, which, if they are wise, it will be your pleasure to follow; and if they fail to meet your approbation, it will be your duty to disregard them.

During the past year our city, through the favor of a kind Providence, has been free from disasters of an unusual nature, and the general health of our people has been good. The death rate has decreased below that of any year since the organization of the city; but among those whom the Great Reaper has stricken down, was one who has filled a large part in our municipal history, — a man of large brain, of quick and broad sympathies, of great personal magnetism and power, who had been honored by us in every way it was possible for his fellow-citizens to bestow honor, who had filled every office in the gift of the people, and who, on the change of the government from a town to a city, was unanimously elected our first mayor. It will be gratifying to know that the city will soon be in possession of a portrait of the late Hon. George O. Brastow, a gift to it from a number of our citizens.

FINANCES.

The financial condition of the city on the thirty-first day of December, the close of the fiscal year, was as follows: —

Funded Debt	\$1,596,854 00
Temporary Loans	205,000 00
Other Liabilities	7,999 04
Total Debt	<u>\$1,809,853 04</u>

The funded debt is classified as follows : —

City Debt	\$1,261,854 00
Water Loan	335,000 00
Total	<u>\$1,596,854 00</u>

The net debt of the city, including the water loan, is \$1,388,-694.43, and is ascertained as follows : —

Gross City Debt	\$1,809,853 04
Less Sinking Funds	\$144,963 84
Less uncollected Taxes and Assessments, and cash on hand	276,194 77
	<u>421,158 61</u>
Net City Debt	<u>\$1,388,694 12</u>

The Gross City Debt, Dec. 31, 1877, was as follows . . .	\$1,886,674 63
The Gross City Debt, Dec. 31, 1878	1,809,853 04
Showing a diminution of	<u>\$76,821 59</u>

Net City Debt, Dec. 31, 1877	\$1,460,266 55
Net City Debt, Dec. 31, 1878	1,388,694 43
Showing a diminution of	<u>\$71,572 12</u>

The sum levied by taxation for the year 1878 was less than the sum levied the previous year by \$62,229.04, and there was saved to the city from the various appropriations, by the economical management of the past city government, the further sum of \$20,000. The taxes for 1878 amounted to \$409,497.10; and of this large amount, it is worthy of notice and remembrance by every citizen that the City Council had the control and expenditure of only \$126,800. And as in times of business depression and a high rate of taxation, the action of the city government is closely watched and readily criticised by the tax-payers, I would call their especial attention to the following analysis of the appropriations for the past year, which will show the amount and purposes for which the same were raised : —

Appropriations, 1878, which the City Council was obliged by law to make, and over which it had no control : —

Library	\$1,200 00
Interest	84,500 00
School Contingent	10,000 00

School Fuel	\$3,000 00
School-house Repairs	5,000 00
Reduction of Funded Debt	10,000 00
School Teachers' Salaries	63,500 00
Sinking Funding Contributions	45,880 62
Support of Poor	12,900 00
Water Maintenance	13,750 00
State Tax	15,440 00
County of Middlesex	11,153 27
Sum added by Assessors (overlay and abatement)	6,373 21
Total	<u>\$282,597 10</u>

Appropriations, 1878, under control of committees of the City Council:—

Central Hill Improvement	\$2,000
Fire Department	20,000
Health Department	2,800
Highways	28,000
Miscellaneous	8,000
Police	23,100
Police Station Incidentals	2,500
Public Park Maintenance	2,000
Salaries	17,800
Sewers	7,000
Sidewalks	5,000
Soldiers' Relief	800
Street Lights	7,000
Total	<u>\$126,800</u>

This classification is absolutely correct, with the exception of \$1,200 to the public library, and about \$4,000 included in the appropriation for water maintenance, the remainder of that appropriation being for interest on the water bonds. It will thus be seen that all the departments under the control of the City Council have been carried on during the past year for appropriations that amounted to the sum of \$126,800, only \$44,300 more than the appropriations for the schools; and adding the excess of expenditures over appropriations for schools, and deducting the savings on the appropriations under control of the City Council, it makes the actual expenditures for all city purposes, as above stated, about \$36,000 above the cost of the schools alone.

This statement, I think, will make it clear to every citizen within

what limits it is possible for us to economize, and where the responsibility rests for every item in our annual appropriations.

And though the levy for taxes was the last year reduced by the sum of \$62,292.04, yet, without going into a minute explanation, I think a still further reduction can be made the present year of \$40,000, and with a lessened State and county tax, which can be reckoned upon with considerable certainty, of probably fifty odd thousand dollars, which will make our total tax for the year about \$350,000, a sum less by \$160,000 than the amount raised but four years ago, when no contributions were made to the sinking funds towards the payment of the funded debt.

I think a comparison with other cities will show that Somerville has taken the lead in the way of reducing her annual expenditures and the payment of her obligations. Our credit is all that can be desired ; and if we but continue for a few years as we have begun, our taxes will no longer be felt as a burden, and our vacant lands will be sought after by those who desire a home in the most beautiful and healthful of the suburbs of our New England metropolis.

It is worthy of notice and commendation that the good judgment of past city governments has placed our bonded debt on a short term, so that the whole of it will mature within six years. The annual saving to the city, on interest account, by refunding the same at the rate of five per cent, will result as follows : —

YEAR.	AMOUNT.
1879	\$1,349 27
1880	1,897 50
1881	2,787 50
1882	2,737 50
1884	6,697 50
1885	1,092 50
<hr/>	
Total	\$15,507 77
<hr/>	

And even if the rate of interest before the maturity of the last of these bonds should be higher, which is not probable, it can be so arranged that the greater part of these can be taken by the Sinking Fund Commissioners at that rate, and this large saving of interest be made available to the city.

WATER WORKS.

In this connection, also, I desire to call your attention to the Somerville Water Works. The Mystic water was introduced into our city in 1869, under a contract made with the city of Charlestown, at a time when we were under a town government, and its population was much less than it now is. The terms of the contract were, it is claimed, and without doubt justly, as favorable as could then be made. By the rapid increase in our population, and the consequent increase of water-takers, the contract has come to be a very profitable one to the city of Boston, the legal successor to Charlestown by annexation, and a very inequitable one to the city of Somerville. The following table shows the net receipts to Charlestown and Boston, for their supply of water to us : —

YEAR.	AMOUNT.
1869	\$5,586 73
1870	11,211 40
1871	17,023 74
1872	21,220 11
1873	25,698 11
1874	30,494 48
1875	38,038 70
1876	39,320 47
1877	39,411 22
1878 (to May 1)	35,999 50

From these figures it appears that the net receipts to the party furnishing the water have increased nearly four times in the short space of eight years, reckoning from 1870, when the laying of the pipes was substantially completed. The largest sum received by Somerville, any one year, was \$10,735.90, in 1877. It is not necessary here to enter into an extended argument to show in what way and to what extent the terms of the contract have grown to be exceedingly profitable to Boston and oppressive to us. It results from facts which neither party apprehended at the time it was made. I have reason to believe that if the matter is properly pressed upon the attention of the Boston Water Board, a modification of the contract will be conceded to us that will result in a large saving, possibly to such an extent as will make our water works self-sustaining, which would in effect relieve us of our whole water debt, amounting to \$335,000. To bring about this result I would

recommend that the subject be placed in the hands of a special committee at as early a date as possible. To my mind this is one of the most important matters that can engage the attention of the city government the present year; and if we fail in our reasonable expectations in the way I have indicated, the question of a new and independent supply of water will be forced upon us or our successors.

HEALTH DEPARTMENT.

As I took occasion a year ago to express the opinion that the city had made a mistake in voting to accept the Health Act passed by the General Court in 1877, I desire now to say that the experience of the past year has led me to an entirely different opinion from the one then expressed. The Board of Health has been in successful operation since its organization in the early part of the year; and beside relieving the City Council of a large amount of work, I am satisfied it has accomplished more in the way of abating a large number of nuisances than it would have been possible to accomplish under the old law. It has also commenced a systematic examination of house drainage throughout the city, and to enforce wholesome rules and regulations in all cases of contagious diseases. Without attempting to assign the cause, it is a matter of congratulation that during the last three years, the death-rate among us has been gradually diminishing. The following is the number of deaths in our city since its organization:—

				RATE PER THOUSAND.			
1872	.	.	400	.	.	.	24.30
1873	.	.	425	.	.	.	21.70
1874	.	.	490	.	.	.	22.96
1875	.	.	501	.	.	.	22.86
1876	.	.	444	.	.	.	20.18
1877	.	.	441	.	.	.	19.15
1878	.	.	385	.	.	.	16.21

As the population of the city is larger than at any previous time, it is only reasonable to conclude from the above figures that the great work done in previous years, in abating nuisances that had long been the cause of an unenvied notoriety to our city, and the greater care exercised during the past year, have been among the causes that have contributed to this happy result. Somerville now ranks, if not the first, among the first of the cities of the

Commonwealth, in point of healthfulness. The rate is lower than the lowest given in the report of the State Board of Health for 1877.

PUBLIC LIBRARY.

One of the wisest acts that has been done in our city was the establishment of the public library. It was founded in 1873, and each year has been growing in public favor and usefulness. It had its beginning in a small way, and under the careful and wise management of its various boards of trustees, with but little expense to the city, has grown to be respectable in size, and honorable to the city from the character of the books that compose it. To my mind, it is doing a work that can be accomplished in no other way, — a work supplemental to that of our schools, and in every way as useful. The number of books given out during the past year was 61,076, and the number of new names registered was 1,058. The fact is, that if there is any institution in the city that meets a public want, it is the public library. The room in which it is located is entirely inadequate. It is so crowded during the evenings that not only is it an impossibility for one to examine the valuable and costly books of reference, but inconvenience of selecting books is so great, that many go away and give up entirely the object for which they came. It is almost a waste of words to say that a city of the size of our own can well afford to furnish books for its citizens, as well as a suitable place for their delivery ; indeed, it would be better to say it cannot afford to refuse such necessities. I would suggest and recommend that an extension be built the present year to the east end of the City Hall, one story in height, which will give the needed room for several years to come. This addition can be made at an expense of \$1,350. I hardly think the objection can be raised of marring the symmetry or beauty of the present City Hall. A new building for a public library will be one of the demands in the near future that will have to be met, unless some one of our generous and public-spirited fellow-citizens shall claim for himself the privilege of connecting his name with a benefaction that will serve to keep it in pleasant and enduring remembrance among the generations of the reading public that shall come after him.

BRIDGES.

During the early part of last year a special committee was appointed for the purpose of securing new bridges over the rail-

road tracks on Washington, Medford, and School Streets. The committee, by constantly pressing the matter upon the attention of the Fitchburg Railroad Company, succeeded in effecting an arrangement with that corporation, by which a new and substantial iron bridge fifty-five feet in width has replaced the narrow and shabby structure that had so long been a just cause of complaint to the owners of property on Washington Street, and to our citizens generally. The same corporation has also during the past year improved very materially the Prospect Street bridge and its approaches. It is but just to say that the president of the road met the committee in a fair spirit, and fulfilled his agreement with them to their entire satisfaction. This has resulted in an improvement of no small magnitude to our city, almost opening anew one of our finest avenues, leading directly from Union to Harvard Square. Through the same committee an agreement has been made with the Lowell Railroad Company for the building of a new iron bridge over its track on Medford Street, which will be built early the coming spring; and it is hoped that before this city government shall close its labors a new bridge can be built at School Street, which will be of but slight cost to the city.

SUITS AT LAW.

There are still remaining a large number of cases on the dockets of the various courts, to which the city is a party. Most of them relate to street and the public park betterments. It is hoped and expected that they will be brought to a final settlement the present year. A suit has been brought involving the legality of the assessments, and until this is determined no trials can be had by a jury to determine the question whether the assessments are just and equitably laid. It is believed that a verdict by a jury in two or three cases will furnish a basis for the settlement of all; and these being once removed, our expenses for legal services will naturally fall to a comparatively small sum, as the number of suits for personal injuries and other causes are few.

I have now spoken upon all the special subjects that have occurred to me to which I would draw your attention. There are others which will arise during the year; and as they come, it will be for us to meet and to solve them. I have carefully watched the workings of all the departments during the past year, and I think

they have been prudently and wisely managed. The fire department was called upon to meet an unusual emergency at the great fire last summer; and I have never heard but one opinion, and that was that great credit was due to it for the skilful manner in which it was handled, and for the untiring fidelity with which all its members kept to their post of duty during the many hours, I might say days, they were called upon to labor to prevent the spreading of the conflagration and to save property. The police force has been partially reorganized, and its numbers reduced, but its strength and efficiency is still equal to the task of preserving the reputation of the city for order and quietness. The chief has co-operated in every way in making the expenses of his department as small as possible, and in enforcing the ordinances of the city, as well as the laws of the Commonwealth. There has scarcely been a crime committed in the city where the offender has not been convicted and received his sentence. I would neither recommend an increase nor decrease of the present force.

It is hardly necessary to say that, as a rule, the streets of the city are in good condition. This is a fact that comes under the observation of every one, and no little credit is due to the superintendent and the committee under which the work has been performed.

You will commence the labors of the year with no unfinished work bequeathed to you from the past city government. The work required of each member is light as compared with that of former years, yet it is none the less important. The prosperity of cities and towns in a great measure is dependent upon the manner in which they are governed, but not entirely so. There is also a duty resting upon the citizens as well as on the government. There are many things that give a beauty and charm to a place and add value to its property, which can only be accomplished through private taste and enterprise. There are large sections of our city, and some of the most beautiful parts of it, where the value of estates would be increased very perceptibly, if the owners would only be to the slight expense of placing shade trees on the line of the sidewalks. The city has no authority to expend money for such a purpose; and as it has not, I would urge upon the citizens generally the importance of providing continuous lines of shade trees along every street. The marked contrast between the older sections of the city and those that have been recently built upon is such, that

I am surprised the subject should not have been brought home to the attention of every householder.

Gentlemen of the City Council, the honor of sharing in the government of a city consists in the manner in which your work is performed. There is, of course, a certain distinction in being selected by your fellow-citizens to any position of public trust; but a high-minded man will find his chief reward in the satisfaction that will surely come to him who follows continuously a line of conduct that will tend to promote the best interests of the city. I have all faith that this City Council will meet the reasonable expectations of those who sent us here, and that its record will be such as will tend to promote the permanent prosperity of our flourishing municipality.

TREASURER'S
EIGHTH ANNUAL REPORT
OF THE
FINANCIAL CONDITION
OF THE
CITY OF SOMERVILLE.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Feb. 3, 1880.

The Report of the City Treasurer and Collector of Taxes for the year 1879 was received, accepted, and referred to the Committee on Finance, and sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, Feb. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk.*

IN COMMITTEE ON FINANCE, Feb. 14, 1880.

To the City Council of the City of Somerville :

The Committee on Finance, to whom was referred the Annual Report of the City Treasurer for the year ending December 31, 1879, have carefully examined the same, comparing it with the books, warrants and vouchers in the Treasurer's office. They find the Report perfectly correct, and an exact statement of the moneys received and disbursed during the year, and showing the financial condition of the city at the date of the Report.

The records and books of the Treasurer's office are models of neatness and accuracy, and his system of accounts is excellent.

The Committee recommend the acceptance of the Report.

MALCOM B. COLE, *Chairman.*

IN BOARD OF MAYOR AND ALDERMEN, March 2, 1880.

Accepted and sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, March 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk.*

CITY OF SOMERVILLE.

TREASURER'S OFFICE, Feb. 3, 1880.

To the Honorable, the Mayor, and the City Council of the City of Somerville :

GENTLEMEN, — The undersigned presents herewith his Eighth Annual Report as treasurer of this city.

The value of the public property, as appears by the books, is \$1,121,400.

The funded debt, Dec. 31, 1878, was \$1,596,854. Of this sum \$69,854 matured during the past year. New bonds were issued by authority of the City Council for \$58,000, and sold to the Commissioners of the Sinking Funds, and the remaining \$11,854 was provided for by transfer from the credit balance of Excess and Deficiency account of 1878, \$2,170.24, and from unappropriated funds in the treasury, \$9,683.76 ; leaving the funded debt, Dec. 31, 1879, \$1,585,000.

The unfunded liabilities are, temporary loans (money borrowed to pay current expenses in anticipation of the collection of taxes, assessments, etc), \$210,000 ; sundry persons, \$1,243.86 ; and the credit balances of the following-named accounts, subject to withdrawal from the treasury : Sewers (Beacon and Elm Street sewer), \$6,413.52 ; Public Library, \$38.64 ; and Public Park (contingent upon the collection of the park betterment assessments), \$31,611.11, — a total of \$249,307.13.

The assets available for the payment of the unfunded liabilities are : Taxes, \$150,162.01 ; Real Estate Liens, \$18,822.21 ; Sewer assessments, \$11,252.94 ; Sidewalk assessments, \$2,039.67 ; Water Service assessments, \$296.52 ; Highway Betterment assessments, \$5,480.55 ; Public Park betterment assessments, \$29,067.84 ; State of Massachusetts on State Aid account, \$4,303 ; on Support of Soldiers and Sailors account, \$625 ; and on Indigent Soldiers and Sailors account, \$302.50 ; and Cash, \$5,757.07, — a total of \$228,109.31.

Total of unfunded liabilities,	\$249,307 13
Total of available assets,	228,109 31
Excess of liabilities over assets,	<u>\$21,197 82</u>

The tax levy for 1879 was on a valuation of \$18,950,100 at \$18 on a thousand, and 5,726 polls at \$2 each, and was for

Appropriations for current expenses,	\$328,875 00
State of Massachusetts for State tax,	7,720 00
County of Middlesex for County tax,	11,153 27
Overlay and Abatement account to meet abatements on taxes,	4,805 53
Amounting to	<u>\$352,553 80</u>

The aggregate expenses for the year (current expenses, State and County taxes, and abatements on taxes and assessments) exceeded the amount of the tax levy and the sum to the credit of Excess and Deficiency account, Dec. 31, 1878 (after deducting the \$2,170.24 appropriated to the reduction of the funded debt, as before stated), the sum of \$21,197.82, the deficit already noted, and which must by law be provided for by taxation the present year.

The financial condition of the city, aside from the public property, is : —

Funded debt,	\$1,585,000 00
Unfunded liabilities,	249,307 13
Gross debt,	<u>\$1,834,307 13</u>
Available assets,	228,109 31
Debt less available assets,	<u>\$1,606,197 82</u>
The amount of the sinking funds, taken from the report of the commissioners, is	198,025 60
And leaves net,	<u>\$1,408,172 22</u>
Or, if the park betterment assessments (credited Public Park account and contingent, mainly upon the results of suits at law), be accounted, amounting to	31,611 11
Will leave the net debt, Dec. 31, 1879,	<u>\$1,376,561 11</u>

The gross cash receipts for the year, including	
the balance from the year 1878, were	\$1,306,017 97
And the gross cash disbursements,	1,300,260 90
	<hr/>
Leaving the sum of	\$5,757 07
in the treasury at the close of the year.	

Respectfully submitted,

AARON SARGENT,

Treasurer.

APPENDIX TO TREASURER'S REPORT.

Table A.

PUBLIC PROPERTY, DEC. 31, 1879.

Central Hill Land (12 acres, 27,920 feet),		\$100,000 00
City Hall,	\$10,000 00	
Furniture,	3,000 00	
	<hr/>	13,000 00
Public Library,		8,500 00
Steam Fire Engine House,	\$10,000 00	
Furniture,	500 00	
Steam Fire Engine and apparatus,	4,000 00	
Steam Fire Engine Hose Carriage and apparatus,	2,000 00	
	<hr/>	16,500 00
High School House,	\$40,000 00	
Furniture,	3,500 00	
Philosophical apparatus,	500 00	
	<hr/>	44,000 00
Prescott School House Land (21,444 feet) and Building,	\$40,000 00	
Furniture,	2,000 00	
	<hr/>	42,000 00
Luther V. Bell School House Land (23,396 feet) and Building,	\$40,000 00	
Furniture,	3,000 00	
	<hr/>	43,000 00
<i>Amount carried forward,</i>		<hr/> \$267,000 00

<i>Amount brought forward,</i>		\$267,000 00
Forster School House Land (32,693 feet) and Building,	\$40,000 00	
Furniture,	1,500 00	
	<hr/>	41,500 00
Morse School House Land (29,109 feet) and Building,	\$25,000 00	
Furniture,	1,000 00	
	<hr/>	26,000 00
Lincoln School House Land (18,000 feet) and Building,	\$11,000 00	
Furniture,	500 00	
	<hr/>	11,500 00
Prospect Hill School House Land (25,-313 feet) and Building,	\$20,000 00	
Furniture,	600 00	
	<hr/>	20,600 00
Jackson School House Land (11,212 feet) and Building,	\$8,000 00	
Furniture,	300 00	
	<hr/>	8,300 00
Bennett School House Land (20,560 feet) and Building,	\$8,000 00	
Furniture,	300 00	
	<hr/>	8,300 00
Webster School House Land (11,050 feet) and Building,	\$8,000 00	
Furniture,	300 00	
	<hr/>	8,300 00
Union School House Land (9,360 feet) and Building,	\$2,500 00	
Furniture,	100 00	
	<hr/>	2,600 00
Harvard School House Land (9,810 feet) and Building,	\$2,500 00	
Furniture,	100 00	
	<hr/>	2,600 00
<i>Amount carried forward,</i>		<hr/> \$396,700 00

<i>Amount brought forward,</i>		\$396,700 00
Edgerly School House Land (26,428 feet) and Building,	\$25,000 00	
Furniture,	500 00	
	<hr/>	25,500 00
Brastow School House Land (10,019 feet) and Building,	\$6,000 00	
Furniture,	250 00	
	<hr/>	6,250 00
Franklin School House Land (33,017 feet) and Building,	\$14,000 00	
Furniture,	300 00	
	<hr/>	14,300 00
Beach Street School House Land (6,000 feet) and Building,	\$4,500 00	
Furniture,	250 00	
	<hr/>	4,750 00
Spring Hill School House Land (4,991 feet) and Building,	\$1,600 00	
Furniture,	100 00	
	<hr/>	1,700 00
City Farm Land (10 acres, 12,523 feet),		30,000 00
Cedar Street School House,	\$700 00	
Furniture,	100 00	
	<hr/>	800 00
City Stables and Dwelling Houses,		7,000 00
Equipments for Highway Repairs,		3,000 00
Watering Carts and Sheds,		2,300 00
No. 1 Hose House Land (4,312 feet) and Building,	\$2,300 00	
Furniture,	400 00	
John E. Wool Hose Carriage and apparatus,	2,000 00	
	<hr/>	4,700 00
No 2 Hose House Land (5,400 feet) and Building,	\$7,500 00	
Furniture,	300 00	
Winter Hill Hose Carriage and apparatus,	2,000 00	
	<hr/>	9,800 00
<i>Amount carried forward,</i>		\$506,800 00

<i>Amount brought forward,</i>		\$506,800 00
No. 3 Hose House Land (5,226 feet)		
and Building,	\$9,000 00	
Furniture,	300 00	
Geo. H. Foster Hose Carriage		
and apparatus,	2,000 00	
R. A. Vinal Hook and Ladder		
Truck and apparatus,	3,400 00	
Prescott Hook and Ladder		
Truck and apparatus,	100 00	
	<hr/>	14,800 00
No. 4 Hose House Land (9,100 feet)		
and Building,	\$11,000 00	
Furniture,	400 00	
Geo. O. Brastow Hose Car-		
riage and apparatus,	2,000 00	
Relief Hose Carriage,	600 00	
	<hr/>	14,000 00
Fire Alarm Telegraph,		15,800 00
Police Station Land (15,232 feet) and		
Building (Bow Street),	\$40,000 00	
Furniture,	3,000 00	
	<hr/>	43,000 00
Prospect Street Land (7,918 feet) and		
Building,		7,000 00
Public Park (cost \$212,993.20),		125,000 00
Joy Street Land (2,960 feet),		500 00
Walnut Hill Land (10,890 feet),		1,000 00
Ledge Land on Bond Street (39,732 feet),		2,500 00
Holland St. (5 a., 6,806 feet),		12,000 00
Somerville Ave. (39,456 feet),		5,000 00
Gravel Land in Waltham (about 35		
acres),		15,000 00
Gravel Land in Wakefield (about 1 $\frac{1}{3}$		
acres),		5,000 00
Gravel Land in Winchester (about 2		
acres),		500 00
	<hr/>	
<i>Amount carried forward,</i>		\$767,900 00

<i>Amount brought forward,</i>	\$767,900 00
Somerville Water Works (cost \$342,- 608.76),	341,000 00
Tufts Street Land (29,584 feet),	5,000 00
Oliver Street Land (63,069 feet),	7,500 00
	<hr/>
Total value of Public Property,	\$1,121,400 00
	<hr/> <hr/>

Table B.

FUNDED DEBT, DECEMBER 31, 1879.

Date.	Loan.	Numbers of Bonds.	Rate per cent of Interest.	When due.	Denomination.	Amount.
1870.				1880.		
July 1,	City,	Town 3,	6½	July 1,	\$5,000	\$55,000
Oct. 1,	"	" 4,	"	Oct. 1,	21,500	21,500
1874.						
Oct. 1,	Sidewalk,	8,	"	"	10,000	10,000
1870.						
Oct. 1,	Water,	6,	"	"	40,000	40,000
1870.				1881.		
Dec. 31,	"	7,	"	Jan. 1,	20,000	20,000
"	City,	Town 5,	"	"	5,000	5,000
"	"	School 2,	"	"	3,000	3,000
1871.						
April 1,	"	School 3,	"	April 1,	60,000	60,000
Oct. 1,	Water,	8 to 11,	"	Oct. 1,	10,000	40,000
"	City,	Town 6,	"	"	10,000	10,000
"	"	" 7,	6	"	2,000	2,000
"	"	" 8,	6½	"	11,500	11,500
"	"	School 4,	"	"	25,000	25,000
1874.						
Oct. 1,	Sidewalk,	9,	"	"	10,000	10,000
1872.				1882.		
April 1,	City,	1,	"	April 1,	17,500	17,500
July 1,	"	3 & 4,	"	July 1,	5,000	10,000
"	"	5 & 6,	"	"	10,000	20,000
"	Water,	12,	"	"	50,000	50,000
"	"	13,	"	"	40,000	40,000
"	City,	8 & 10,	"	"	10,000	20,000
"	"	9,	"	"	5,000	5,000
"	"	11 & 12,	"	Oct. 1,	5,000	10,000
1874.						
Oct. 1,	Sidewalk,	10,	"	"	10,000	10,000
1884.						
April 1,	City,	49,	"	April 1,	10,000	10,000
"	"	52 to 54,	"	"	5,000	15,000
"	"	55,	"	"	2,000	2,000
"	"	57 & 60,	"	"	10,000	20,000
1872.						
July 1,	"	7,	5½	July 1,	20,000	20,000
1874.						
July 1,	"	66,	6½	"	2,000	2,000
"	"	67,	"	"	5,000	5,000
"	"	72 to 79,	"	"	5,000	40,000
"	Water,	16 to 18,	"	"	5,000	15,000
1872.						
Oct. 1,	City,	13,	6	Oct. 1,	6,000	6,000
"	"	14 to 17,	"	"	5,000	20,000
1874.						
Oct. 1,	"	80 to 86,	6½	"	5,000	35,000
"	"	87 to 96,	"	"	5,000	50,000
"	"	98,	"	"	5,000	5,000
"	"	99,	"	"	2,500	2,500
"	"	100,	"	"	1,000	1,000
"	"	101 to 103,	"	"	3,000	9,000
"	"	104,	"	"	1,000	1,000
"	"	105,	"	"	2,000	2,000
"	"	106 to 111,	"	"	5,000	30,000
"	"	116,	"	"	3,000	3,000
"	"	117 to 121, 123 to 142,	"	"	5,000	125,000
"	"	147 to 156,	"	"	5,000	50,000
1877.						
Oct. 1,	Water,	32,	5	Oct. 1,	5,000	5,000
1878.				1885.		
Jan. 1,	City,	337,	"	Jan. 1,	5,000	5,000
Amount		carried forward				\$974,000

Table B. — *Continued.*

Date.	Loan.	Numbers of Bonds.	Rate per cent of Interest.	When due.	Denomination.	Amount.
	<i>Amount brought forward</i>		.....	.....	.....	\$974,000
1876. April 1, 1879.	City,	188,	5½	April 1,	\$4,500	4,500
April 1, 1875.	"	342,	5	"	6,000	6,000
July 1,	Water,	19 to 22,	6	1885. July 1,	5,000	20,000
"	City,	157,	"	"	4,000	4,000
"	"	158,	"	"	3,000	3,000
"	"	159,	"	"	5,000	5,000
"	"	160 to 162,	"	"	5,000	15,000
"	"	163 to 174,	"	"	5,000	60,000
1876. April 1,	"	175 to 182,	5½	1886. April 1,	5,000	40,000
"	"	183 to 185,	"	"	5,000	15,000
"	"	186,	"	"	5,000	5,000
"	"	187,	"	"	1,000	1,000
"	Water,	23 to 27,	"	"	10,000	50,000
"	"	28,	"	"	5,500	5,500
1878. Jan. 1,	City,	335,	5	1895. Jan. 1,	37,000	37,000
"	"	336,	"	"	1,000	1,000
"	"	338,	"	"	2,000	2,000
1879. Jan. 1,	Water,	34,	"	"	25,000	25,000
"	City,	339,	"	"	12,000	12,000
"	"	340,	"	"	1,500	1,500
"	"	341,	"	"	1,500	1,500
1876. April 1,	City,	189,	5½	April 1,	35,500	35,500
Oct. 1,	"	190 to 194,	5	"	5,000	25,000
"	"	195 to 334,	"	"	1,000	140,000
1879. April 1,	"	343,	"	"	4,000	4,000
Oct. 1,	"	344,	"	"	8,000	8,000
"	"	345,	"	"	25,000	25,000
1876. July 1,	Sewer,	1 to 7,	"	1896. July 1,	5,000	35,000
1877. Oct. 1,	Water,	33,	"	1904. Oct. 1,	5,000	5,000
1879. Jan. 1,	"	35,	"	1905. Jan. 1,	5,000	5,000
1876. April 1,	"	29,	5½	April 1,	4,500	4,500
July 1,	"	30 & 31,	"	1906. July 1,	5,000	10,000
	<i>Total</i>	<i>Funded Debt</i>	.....	.....	.....	\$1,585,000

Table C.

STATEMENT OF ACCOUNTS, SHOWING APPROPRIATIONS, RECEIPTS, EXPENDITURES, ETC., TO DEC. 31, 1879.

APPROPRIATIONS.

Credit.

TAXES, amount assessed for current expenses,	\$328,875 00
PROPERTY and DEBT BALANCE, appropriated in 1879,	58,000 00
	<hr/> \$386,875 00

Debit.

FIRE DEPARTMENT,	\$20,000 00
HEALTH DEPARTMENT,	2,700 00
HIGHWAYS,	28,000 00
INTEREST,	65,000 00
MISCELLANEOUS,	3,000 00
POLICE,	22,500 00
POLICE STATION INCIDENTALS,	2,300 00
PUBLIC LIBRARY,	1,200 00
PUBLIC PARK MAINTENANCE,	1,200 00
REDUCTION OF FUNDED DEBT,	58,000 00
SALARIES,	16,450 00
SCHOOL CONTINGENT,	9,000 00
SCHOOL-HOUSE REPAIRS,	5,500 00
SCHOOL FUEL,	3,000 00
SCHOOL TEACHERS' SALARIES,	59,000 00
SEWERS,	7,500 00
SINKING FUND CONTRIBUTIONS,	45,525 00
SOLDIERS' RELIEF,	1,000 00
STREET LIGHTS,	7,500 00
SUPPORT OF POOR,	13,000 00
SIDEWALKS,	2,500 00
WATER MAINTENANCE,	13,000 00
	<hr/> \$386,875 00 <hr/>

CASH.

Credit.

COUNTY OF MIDDLESEX,	\$11,153 27
FIRE DEPARTMENT,	21,414 41
FUNDED DEBT,	69,854 00
HEALTH DEPARTMENT,	2,886 62
HIGHWAYS,	30,310 90
HIGHWAYS (APPLETON STREET),	85 22
HIGHWAYS (HIGHLAND AVENUE EXTENSION),	526 84
INDIGENT SOLDIERS AND SAILORS,	605 00
INTEREST,	84,477 98
LIQUOR LICENSES,	995 94
MISCELLANEOUS,	6,926 54
MISCELLANEOUS (WATERING STREETS),	3,659 40
OVERLAY AND ABATEMENT,	76 13
POLICE,	23,743 85
POLICE STATION INCIDENTALS,	2,950 31
PUBLIC LIBRARY,	2,835 72
PUBLIC PARK MAINTENANCE,	1,244 91
SALARIES,	16,799 32
SCHOOL CONTINGENT,	9,411 20
SCHOOL TEACHERS' SALARIES,	63,833 44
SCHOOL-HOUSE REPAIRS,	8,742 64
SCHOOL FUEL,	3,040 71
SEWERS,	29,548 31
SEWERS (BEACON AND ELM STREET SEWER),	677 81
SIDEWALKS,	5,420 10
SINKING FUND CONTRIBUTIONS,	45,525 00
SOLDIERS' RELIEF,	1,013 59
SOMERVILLE WATER WORKS,	791 56
STATE AID,	4,312 00
SUPPORT OF SOLDIERS AND SAILORS,	625 00
STATE OF MASSACHUSETTS,	7,720 00
STREET LIGHTS,	7,008 30
SUPPORT OF POOR,	17,643 75
TEMPORARY LOANS,	785,000 00
WATER MAINTENANCE,	27,376 51
WATER SERVICES,	2,024 62
	<hr/>
	\$1,300,260 90
BALANCE, to debit in account of 1880,	5,757 07
	<hr/>
	\$1,306,017 97

Debit.

BALANCE from 1878,	\$6,748 78
FUNDED DEBT,	58,000 00
HIGHWAYS,	1,407 98
HIGHWAY BETTERMENT ASSESSMENTS,	2,523 88
INTEREST,	18,474 55
LIQUOR LICENSES,	3,983 75
MISCELLANEOUS,	1,459 60
MISCELLANEOUS (WATERING STREETS),	2,131 40
POLICE,	1,300 75
POLICE STATION INCIDENTALS,	400 95
PUBLIC LIBRARY,	1,196 30
PUBLIC PARK BETTERMENT ASSESS- MENTS,	7,850 11
PUBLIC PARK MAINTENANCE,	52 00
REAL ESTATE LIENS,	6,138 39
SCHOOL CONTINGENT,	136 30
SCHOOL-HOUSE REPAIRS,	495 25
SEWERS,	3 60
SEWERS (BEACON AND ELM STREET SEWER),	40 00
SEWER ASSESSMENTS,	6,695 93
SIDEWALKS,	9 25
SIDEWALK ASSESSMENTS,	2,988 29
STATE AID,	9 00
STATE OF MASSACHUSETTS,—STATE AID,	4,308 50
STATE OF MASSACHUSETTS,—SUPPORT OF SOLDIERS AND SAILORS,	2,440 00
STREET LIGHTS,	365 50
SUPPORT OF POOR,	4,676 64
TAXES,	367,332 35
TEMPORARY LOANS,	790,000 00
WATER MAINTENANCE,	12,688 28
WATER SERVICES,	250 02
WATER SERVICE ASSESSMENTS,	1,910 62
	<hr/> \$1,306,017 97 <hr/>

COUNTY OF MIDDLESEX.

Credit.

TAXES, amount assessed for county tax,	\$11,153 27
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Debit.

CASH, paid county tax,	\$11,153 27
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EXCESS AND DEFICIENCY.

Credit.

BALANCE, from 1878,	\$19,748 05
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PUBLIC PARK MAINTENANCE, credit balance of account,	7 09
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STREET LIGHTS, credit balance of account,	857 20
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SUPPORT OF POOR, credit balance of account,	32 89
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POLICE, credit balance of account,	56 90
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WATER MAINTENANCE, credit balance of account,	166 75
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SIDEWALKS, credit balance of account,	1,352 04
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BALANCE, to debit in account of 1880,	21,197 82
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	\$43,418 74
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Debit.

REDUCTION OF FUNDED DEBT, transferred,	\$2,170 24
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SIDEWALKS, transferred,	1,500 00
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WATER MAINTENANCE, transferred,	2,000 00
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SEWERS, transferred,	5,600 00
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HEALTH DEPARTMENT, debit balance of account,	186 62
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SALARIES, debit balance of account,	349 32
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SCHOOL TEACHERS' SALARIES, debit balance of account,	4,833 44
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OVERLAY AND ABATEMENT, debit balance of account,	6,945 40
--	----------

HIGHWAYS (APPLETON STREET), debit balance of account,	85 22
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HIGHWAYS (FLORENCE STREET), debit balance of account,	301 40
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HIGHWAYS (HIGHLAND AVENUE EXTENSION), debit balance of account,	8,186 84
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Amount carried forward,	\$32,158 48
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<i>Amount brought forward,</i>	\$32,158 48
POLICE STATION INCIDENTALS, debit balance of account,	249 36
SCHOOL FUEL, debit balance of account,	40 71
FIRE DEPARTMENT, debit balance of account,	1,414 41
SCHOOL CONTINGENT, debit balance of account,	274 90
SOLDIERS' RELIEF, debit balance of account,	13 59
SOMERVILLE WATER WORKS, debit balance of account,	267 94
INTEREST, debit balance of account,	1,189 19
MISCELLANEOUS, debit balance of account,	495 38
SEWERS, debit balance of account,	3,361 97
HIGHWAYS, debit balance of account,	902 92
INDIGENT SOLDIERS AND SAILORS, debit balance of account,	302 50
SCHOOL-HOUSE REPAIRS, debit balance of account,	2,747 39
	<hr/>
	\$43,418 74

FIRE DEPARTMENT.

Credit.

APPROPRIATIONS, amount assessed,	\$20,000 00
EXCESS AND DEFICIENCY, balance to debit of account,	1,414 41
	<hr/>
	\$21,414 41

Debit.

CASH paid James R. Hopkins, Chief Engineer,	\$900 00
N. C. Barker, Assistant Engineer,	400 00
Theophilus Cunningham, clerk to Chief Engineer,	50 00
Steamer Engineer,	900 00
Steamer Fireman,	750 00
	<hr/>
<i>Amount carried forward,</i>	\$3,000 00

<i>Amount brought forward,</i>	\$3,000 00
Seven drivers,	5,250 00
G. W. Ring, substitute driver,	28 23
Frank Walker, “ “	84 68
C. P. Horton, “ “	22 18
Theophilus Cunningham, substi- tute driver,	28 23
labor on hydrants,	12 00
Steamer Engine Co.,	780 00
John E. Wool Hose Co.	705 00
Winter Hill “	705 00
Geo. H. Foster “	674 75
Geo. O. Brastow “	686 25
R. A. Vinal H. & L. “	1,073 75
Jas. R. Hopkins, extra compensa- tion in 1878,	100 00
City of Boston, water for hydrants,	1,176 00
water rates,	110 00
N. Tufts & Son, grain,	428 04
Hosmer, Crampton & Hammond, hay and straw,	378 51
W. M. Hadley, hay,	153 25
Foster, Weeks & Co., hay,	141 47
J. H. Brine, hay and straw,	13 55
Hewey, Skillins & Co., hay and straw,	9 73
H. Wellington & Co., fuel,	353 71
Cook, Rymes & Co., repairs,	88 55
Hunneman & Co., “	84 49
Seward Dodge, blacksmithing,	141 40
Fred Belanger, “	1 20
F. E. Boynton, repairing pung,	2 00
J. Leland, wheelwright work,	11 70
American Fire Hose Manuf. Co., hose,	900 00
repairing hose,	1 00
N. L. Pennock, harness work,	55 90
T. B. Wilson, “ “	46 10
A. T. Colburn & Co., harness work,	11 20
<i>Amount carried forward,</i>	<u>\$17,257 87</u>

<i>Amount brought forward,</i>	\$17,257 87
J. N. White, harness work,	10 35
F. Ivers, " "	5 10
E. O'Brien, horseshoeing,	32 80
J. G. Harmon, "	22 73
Chas. Maguire, "	30 36
E. C. Andrews, "	5 00
C. Holmes & Son, stove work,	39 80
J. E. Parsons, " "	11 38
H. W. Raymond, hardware,	18 98
W. L. Snow, "	9 07
J. A. Durell, "	5 50
Union Glass Co., lanterns, etc.	3 93
John Harrington & Co., comforts,	5 00
Jeremiah Watson, chairs,	6 68
G. F. Roach & Co., "	10 50
Hogg, Brown & Taylor, cotton cloth, etc.	4 53
J. F. Cole & Co., dusters, etc.	14 50
R. Warner & Co., brooms, etc.	16 67
J. C. Dyer & Co., painting,	123 25
Thomas McIntire, "	10 00
Boston Belting Co., hose,	5 85
J. Boyd & Sons, fire hats,	25 00
H. A. Winship, " "	10 50
Andrews & Jones, " "	7 50
W. R. Marsh, repairing fire hats,	2 50
F. A. Titus, plumbing,	170 79
Wm. Mills & Co., plumbing,	9 08
Edward Earley, repairing roofs,	36 90
Chas. Williams, Jr., vitriol, etc.	31 76
J. W. Stover, "	40 02
J. S. Nason, horses,	400 00
S. Walker & Co, oil,	3 75
G. P. Palmer, "	2 00
J. Bartley, naphtha, etc.	3 19
J. Peck & Sons, salt,	2 50
Bishop & Bro., ladder, etc.	28 50
John Turner & Co., curbing,	39 37
Austin Ford, granite steps,	18 00
<i>Amount carried forward,</i>	<hr/> \$18,481 21

<i>Amount brought forward,</i>	\$18,481 21
J. O. Hayden & Co., printing,	7 50
Hicks & Badger, copper brake,	4 00
Lewis Putnam, veterinary services,	67 00
Geo. H. Cowdin, drugs,	2 25
Thos. Hollis, medicine, soap, etc.	43 50
A. J. Barnes, soap, etc.	17 50
M. D. Jones & Co, filter,	75
F. Dooris, iron work,	3 35
Walworth Manuf. Co., castings,	5 70
Howe & Flint, pipe,	5 96
E. W. Drake, gas pipe, etc.	7 70
Geo. Cunningham, watching,	1 50
T. J. McCormick, refreshments,	6 30
Adin Davis, labor on stalls,	10 00
Highways Account, sand and labor,	9 63
Water Maintenance Account, labor on hydrants, etc.	183 02
E. S. Bailey, cleaning clocks, etc.	8 25
Boston Steamed Grain Mill, feed,	55
Sabin & Page, brushes, etc.	26 15
W. L. Robinson, medicine,	2 00
Hennessy & Harrington, salt,	1 40
M. R. Warren, stationery,	10 00
Sturtevant Bros., lard,	1 05
M. G. Crane & Co., alarm box and telegraph supplies,	485 06
L. W. Manning, labor on tele- graph poles,	3 13
D. Brooks, mason work,	215 20
W. H. Cullen, plastering,	20 00
Geo. W. Prichard, digging cellar and laying wall,	202 00
R. A. Melvin & Co., carpenter work,	486 43
E. Walker, carpenter work,	25 00
Page & Littlefield, carpenter work,	158 53
A. Caswell, carpenter work,	4 40
<i>Amount carried forward,</i>	<u>\$20,506 02</u>

<i>Amount brought forward,</i>	\$20,506 02
N. C. Barker, carpenter work,	2 31
S. W. Fuller, lumber,	167 33
P. F. Williams, “	50 16
J. F. Ayer, “	5 42
Mason Davis & Son, soap,	10 00
H. W. Burgess, soap, oil, etc.	11 97
O. Nowell, hanging bell,	2 00
H. D. & W. S. Durgin, ice,	15 00
Allen & Prichard, ice,	10 00
B. B. Bullwinkle, snaps,	5 00
Thorpe Express, expressing,	17 35
W. J. London, “	7 60
E. R. Perham, “	50
Henry Shaw, labor,	3 00
Patrick Ryan, “	4 50
L. W. Dow, carrots,	13 00
Cambridge Gas Light Co., gas,	314 01
Charlestown Gas Co., gas,	141 76
Mrs. Calvert, washing,	40 28
S. H. Stevens, “	25 12
T. H. Daly, “	27 75
Mrs. Chas. Trull, washing,	17 25
Mrs C. P. Howard, “	17 08
	<hr/>
	\$21,414 41

FUNDED DEBT.

	Credit.	
BALANCE from 1878,		\$1,596,854 00
CASH received from sale of Bonds Nos. 339 to 345, City Loan,		58,000 00
		<hr/>
		\$1,654,854 00
	Debit.	
CASH paid Town Loan Bond No. 1,	\$14,400 00	
Sidewalk Loan Bond No. 7,	10,000 00	
City Loan Bonds Nos. 2, 44, 51, 61, and 143 to 146,	45,454 00	
	<hr/>	
	\$69,854 00	
BALANCE to credit in account of 1880,	1,585,000 00	
	<hr/>	
		\$1,654,854 00

HEALTH DEPARTMENT.

Credit.

APPROPRIATIONS, amount assessed,	\$2,700 00
EXCESS AND DEFICIENCY, balance to debit of account,	186 62
	<hr/>
	\$2,886 62

Debit.

CASH paid G. W. Cummings, removing offal,	\$980 00
Highways account, collecting ashes,	994 55
W. H. Brine, inspector of Board of Health,	500 00
Geo. I. Vincent, clerk of Board of Health,	100 00
Sundry persons, burying dead animals,	24 00
P. W. Skinner, fumigating,	57 00
Geo. H. Cowdin, peppermint tubes,	36 00
J. O. Hayden & Co., printing and advertising,	50 50
A. L. Haskell & Co., printing,	5 00
Haskell Bros., “	4 50
Winkley, Thorp & Dresser, sta- tionery,	5 75
M. R. Warren, stationery,	10 38
Board of Health, car fares,	5 35
Sturtevant Bros., sulphur,	4 05
J. Bartley, “	1 90
J. S. Murphy, constable's fees,	2 16
W. H. Brine, travelling expenses,	2 04
J. J. & M. F. Fenelon, vials,	1 75
J. E. Eldredge, serving notices,	3 00
M. J. Walsh, “ “	4 48
C. J. Peters, labor on map,	2 00
C. W. Morss, wrappers,	4 24
Photo-Electrotype Co., electro- types,	27 22
Geo. O. Wiley, carriage hire,	7 00
L. H. Brown, “ “	15 00
	<hr/>
Amount carried forward,	\$2,847 87.

<i>Amount brought forward,</i>	\$2,847 87	
G. W. Prichard, filling material,	32 50	
Patrick Ryan, labor,	3 75	
James W. Bowdren, labor,	2 50	
	<hr/>	\$2,886 62

HIGHWAYS.

Credit.

APPROPRIATIONS, amount assessed, \$28,000 00

CASH received from : —

J. P. Prichard, amount received by		
him for old cart,	\$12 50	
gravel,	90	
sand,	80	
brick,	3 80	
filling material,	4 90	
constructing driveway,	10 90	
M. B. Wickliffe, constructing drive-		
way,	14 35	
F. P. Ladd, constructing drive-		
way,	7 20	
Health Department account, col-		
lecting ashes,	994 55	
Edwin Bowker, use of gravel land		
at Waltham,	80 00	
R. Falvey, sand and stone,	38 00	
G. W. Prichard, stone,	7 80	
A. M. Sibley, “	1 25	
Sewers account, “	2 50	
Sidewalk account, gravel,	54 00	
Fire Department account, sand and		
labor,	9 63	
School-house Repairs account,		
labor, etc.	15 05	
Miscellaneous (Watering Streets)		
account, painting carts,	18 85	
Arthur Moland, rent of tenement,	65 00	
E. L. Grant, “ “	66 00	
	<hr/>	1,407 98
EXCESS and DEFICIENCY, balance		
to debit of account,		902 92
		<hr/>
		\$30,310 90

	Debit.	
CASH paid laborers,		\$19,180 15
C. L. Heyward, gravel,		1,104 40
Jeremiah O'Brien, "		42 48
Mrs. A. L. Rich, "		182 24
G. W. Prichard, teaming, gravel, etc.		485 20
Wm. Aylward, teaming,		352 00
Chris'r Burke, "		358 00
O. Cunningham, "		406 00
D. McCarty, "		278 00
T. F. Crimmings, "		230 00
John Hickey, "		234 00
John Carr, "		128 00
Jere'h McCarty, "		102 00
Martin Gill, "		92 00
John Turner & Co., paving stone,		1,216 45
Mrs. S. Swett, stone,		3 00
M. Hittinger, grindstone,		4 00
Sewers account, drain pipe,		2 25
D. W. Lewis, " "		21 78
Howe & Flint, " "		1 42
E. A. Foster, brick,		7 57
S. W. Fuller, lumber,		67 33
E. D. Sawyer, "		7 97
A. Caswell, carpenter work,		16 88
R. A. Melvin & Co., carpenter work,		4 12
Cook, Rymes & Co., hammers, etc.		14 70
Dodge, Gilbert & Co., "		11 56
H. G. Collins, sharpening picks,		5 70
Seward Dodge, blacksmithing,		232 58
F. Dooris, "		76 56
M. Lynch, "		73 65
E. O'Brien, horseshoeing,		133 61
J. G. Harmon, "		86 17
J. Leland, wheelwright work,		46 80
Joseph A. Pearson, harness, etc.		65 00

Amount carried forward,

\$25,273 57

<i>Amount brought forward,</i>	\$25,273 57
J. G. Knapp & Co., harness work,	19 00
N. L. Pennock, " "	16 50
Sabin & Page, " "	73 02
T. B. Wilson, " "	15 40
A. T. Colburn & Co., " "	13 90
Wood, Bailey & Wood, shafts,	2 50
H. Hoyt, shafts,	1 25
Hudson & Gage, painting wagon,	10 00
G. Greenleaf & Co., screen bot- tom,	5 00
W. L. Snow, nails,	1 16
J. F. Bernard & Co., harness dressing,	3 00
W. D. Smith, lettering signs,	3 60
W. H. Murphy, " "	1 00
Union Glass Co., lantern glasses,	9 00
C. H. Crane, drugs,	7 80
Thomas Hollis, "	2 25
A. M. & C. M. Wood, plank,	12 40
Caleb Kingman, mall,	5 00
O. H. Webber, cutting grass,	20 00
Edward Early, repairing roof,	11 40
H. Wellington & Co., coal,	9 40
G. M. Winslow & Co., "	5 40
H. W. Raymond, hardware, etc.	27 03
C. Holmes & Son, "	10 55
Peabody & Whitney, brooms, etc.	8 13
City of Boston, water rates,	36 75
J. F. Cole & Co., soap, etc.	1 90
S. J. Wood, sharpening saws, etc.	3 75
M. R. Warren, stationery,	9 00
J. O. Hayden & Co., advertising,	17 40
C. A. Small, oil, etc.	12 42
White & Wiley, paints,	14 81
J. Q. Twombly, painting,	11 03
Geo. H. Sampson, powder,	74 59
James Forgie, repairing collars,	3 50

Amount carried forward, \$25,752 41

<i>Amount brought forward,</i>	\$25,752 41
J. P. Squire & Co., salt,	3 00
J. A. Durell, labor, etc.	6 13
Miscellaneous account, taxes paid on Wakefield gravel land,	19 76
Town of Waltham, taxes on gravel land,	84 32
Town of Winchester, taxes on gravel land,	7 87
Osgood & Hart, street rolling machine,	170 00
Parker & Gannett, shovels, plough, etc.	94 48
Douglas Frazer, salary as clerk of Committee on Highways,	200 00
John P. Prichard, salary as Super- intendent of Streets,	1,250 00
E. F. Prichard, clerk to Superin- tendent of Streets,	100 00
Middlesex Bleachery and Dye Works, ashes,	39 20
Town of Medford, half cost main- taining Middlesex Avenue bridge in 1878,	411 07
John S. Nason, horses,	400 00
Sargent & Adams, fence de- stroyed,	25 00
W. M. Hadley, hay, straw, etc.	206 09
J. F. Ham, hay,	354 25
George R. Emerson, hay,	60 42
Hewey, Skillins & Co, hay,	21 42
N. Tufts & Son, grain,	204 11
Powers, Melvin & Co., grain,	130 21
A. J. Barnes, grain, etc.	146 08
C. B. Knowles, “	211 31
Knowles Bros., “	298 72
Boston Steamed Grain Mill, feed,	73 05
Am. Steamed Feed Co., “	21 00
Ame & Co., “	7 00
Lewis Putnam, veterinary services,	14 00

\$30,310 90

HIGHWAYS (APPLETON STREET).

Credit.

EXCESS AND DEFICIENCY, amount to debit of account,	\$85 22
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Debit.

CASH paid East Cambridge Five Cents Savings Bank, assessment refunded,	85 22
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HIGHWAYS (FLORENCE STREET).

Credit.

EXCESS AND DEFICIENCY, amount to debit of account,	\$301 40
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Debit.

REAL ESTATE LIENS, abatement on tax title, released,	\$76 30	
HIGHWAY BETTERMENT ASSESSMENTS, abated,	225 10	
	<hr/>	301 40

HIGHWAYS (HIGHLAND AVENUE EXTENSION).

Credit.

EXCESS AND DEFICIENCY, amount to debit of account,	\$8,186 84
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Debit.

CASH paid costs of courts in suits,	\$244 84	
Miscellaneous account, Chas. Robinson, Jr.'s, bill for ser- vices and costs, in suit,	282 00	
	<hr/>	\$526 84
HIGHWAY BETTERMENT ASSESSMENTS, abated,	7,660 00	
	<hr/>	8,186 84

HIGHWAY BETTERMENT ASSESSMENTS.

Credit.

HIGHWAYS (HIGHLAND AVENUE EXTENSION), abated,	\$7,660 00
HIGHWAYS (FLORENCE STREET), abated,	225 10
<i>Amount carried forward,</i>	<hr/> \$7,885 10

<i>Amount brought forward,</i>	\$7,885 10
REAL ESTATE LIENS, title to the city for non-payment of assessments,	150 30
CASH received of sundry persons, assessments,	2,523 88
BALANCE to debit on account of 1880,	5,480 55
	<hr/>
	\$16,039 83

Debit.

BALANCE from 1878,	16,039 83
	<hr/>

INDIGENT SOLDIERS AND SAILORS.**Credit.**

STATE OF MASS. (INDIGENT SOLDIERS AND SAILORS), one half of amount paid in 1879, charged to the State,	\$302 50
EXCESS AND DEFICIENCY, one half of amount paid, to be borne by the city,	203 50
	<hr/>
	\$605 00

Debit.

CASH paid sundry persons,	\$605 00
	<hr/>

INTEREST.**Credit.**

APPROPRIATIONS, amount assessed,	\$65,000 00
CASH received on deposits in banks,	\$568 66
On taxes,	10,208 07
On tax titles released,	670 06
On betterments,	485 57
State Treasurer, corporation and Bank Taxes,	6,542 19
	<hr/>
	18,474 55

REAL ESTATE LIENS, interest on titles to the city on property deeded for non-payment of taxes and assessments,	739 24
EXCESS AND DEFICIENCY, balance to debit of account,	1,189 19
	<hr/>
	\$85,402 98

Debit.

CASH paid on Funded Debt: —

\$10,000.00, 6 months, at 7 per cent,	\$350 00
\$15,000.00, 6 months, at $6\frac{1}{2}$ per cent,	487 50
\$736,000.00, 1 year, at $6\frac{1}{2}$ per cent,	47,840 00
\$115,000.00, 1 year, at 6 per cent,	6,900 00
\$5,454.00, 6 months, $5\frac{1}{2}$ per cent,	150 00
\$135,400.00, 1 year, at $5\frac{1}{2}$ per cent,	7,447 00
\$258,500.00, 1 year, at 5 per cent,	12,925 00
\$1,500.00, 9 months, at 5 per cent,	56 25

\$76,155 75

Less coupons unpaid, 925 00

\$75,230 76

SUNDRY PERSONS, coupons unpaid, as
above,

925 00

\$76,155 75

CASH paid on Temporary Loans: —

Provident Inst. for Savings, on
notes for \$170,000.00, 4 months
at $3\frac{1}{2}$ per cent, \$1,983 33

\$20,000.00, 4 months at $3\frac{3}{4}$ per
cent, 250 00

\$20,000.00, 5 months at $3\frac{3}{4}$ per
cent, 312 50

New England Trust Co., on note
for \$25,000.00, 4 months at $3\frac{3}{4}$
per cent, 312 50

\$25,000.00 on 5 months at $3\frac{3}{4}$
per cent, 390 62

State National Bank, on note for
\$25,000.00, 4 months at $3\frac{3}{4}$ per
cent, 312 50

\$25,000.00 on 5 months at $3\frac{3}{4}$
per cent, 390 62

Warren Institution for Savings, on
note for \$60,000.00, 4 months
and 3 days at $4\frac{1}{2}$ per cent, 922 50

Amount carried forward, \$4,874 57

<i>Amount brought forward,</i>	\$4,874 57
Brewster, Bassett & Co., on notes for \$80,000.00, 3 months and 3 days at four per cent,	826 67
Merchants National Bank, on notes for \$30,000.00, 4 months and 3 days at $3\frac{1}{4}$ per cent,	333 12
J. T. Glines & Co., on note for \$10,000 00, 48 days at $4\frac{6.5}{100}$ per cent,	62 00
27 days at 6 per cent,	45 00
Downer & Co, on notes for \$135,- 000.00, 48 days at $4\frac{6.5}{100}$ per cent,	837 00
A. Sargent, trustee, on note for \$20,000 00, 4 months at $3\frac{1}{2}$ per cent,	233 33
5 months at $3\frac{3}{4}$ per cent,	312 50
48 days at $4\frac{6.5}{100}$ per cent,	124 00
26 days at 6 per cent,	86 67
A. Sargent and E. E. Adams, trustees, on note for \$15,000.00, 4 months at $3\frac{1}{2}$ per cent,	175 00
5 months at $3\frac{3}{4}$ per cent,	234 37
on note for \$10 000.00, 48 days at $4\frac{6.5}{100}$ per cent,	62 00
26 days at 6 per cent,	43 33
Through National Security Bank, on notes for \$60,000.00, 4 months and 3 days at 3 per cent,	615 00
On \$60,615.00, 13 days; \$20,- 000.00, 14 days; and \$60 - 000.00 on 15 days, at 7 per cent,	382 67

\$9,247 23

ON FUNDED DEBT,
ON TEMPORARY LOANS,

\$76,155 75
9,247 23

\$85,402 98

LIQUOR LICENSES.

Credit.

CASH received for —

First Class, 4 at \$150 each,	\$600 00
10 at \$125 each,	1,250 00
1 at	83 75
Fourth Class, 24 at \$75 each,	1,800 00
5 at \$50 each,	250 00

 \$3,983 75

Debit.

CASH paid State Treasurer, one fourth
of amount received,

MISCELLANEOUS transferred,

\$995 94

2,987 81

 \$3,983 75

MISCELLANEOUS.

Credit.

APPROPRIATIONS, amount assessed,

REAL ESTATE LIENS, costs on titles to
the city, on property deeded for
non-payment of taxes and as-
sessments,

\$3,000 00

511 75

CASH received : —

Costs on property sold for non-
payment of taxes and assess-
ments,

301 75

Of the city clerk, fees for recording
mortgages, etc., and for mar-
riage certificates, etc.

777 35

Niles & Littlefield, costs in suit on
betterment case,

73 74

Committee on public property, use
of land on Tufts Street,

5 00

Highways account, tax paid on
gravel land,

19 76

Highways (Highland Avenue
widening), Charles Robinson,
Jr.'s, bill paid for services,

282 00

 1,459 60

LIQUOR LICENSES, city's three fourths of
sum received,

2,987 81

EXCESS AND DEFICIENCY, balance to
debit of account,

495 38

 \$8,454 54

Debit.

CASH paid M. R. Warren, stationery,	\$306 66
Hooper, Lewis & Co., “	52 25
J. M. Whittemore & Co., “	4 00
A. R. Gay & Co, “	72 67
J. O. Hayden & Co., advertising and printing,	1,046 89
Haskell Bros., advertising,	69 65
Globe Newspaper Co., advertising,	8 75
Journal Newspaper Co., “	8 75
J. A. Cummings & Co., printing,	162 25
A. L. Haskell & Co., “	36 00
J. F. Cotter & Co., “	19 00
Rockwell & Churchill, “	16 00
Geo. I. Vincent, taking abstracts from deeds,	200 00
S. C. Darling, amount paid court fees, etc.	49 40
Clerk of court, fees,	5 20
Chas. E. Gilman, amount paid for stamps, etc.	4 65
Greenough & Co., directories,	12 00
C. M. Blake, newspapers,	9 00
Post-office department, rent of box,	4 00
A. W. Mitchell & Co., rubber stamps, etc.	14 00
G. L. Richardson, note field book and services,	56 25
S. C. Jones, repairing letter press,	1 00
F. W. Lincoln, Jr. & Co., steel tapes, etc.	29 25
Buff & Berger, repairing instru- ments,	10 00
Edward Earley, repairing roof,	27 70
A. M. Sibley, mason work,	4 00
John Bristow, “	18 25
A. Caswell, carpenter work,	30 67
Mark Loughton, “	6 59

Amount carried forward,

\$2,284 83

<i>Amount brought forward,</i>	\$2,284 83
Chas. A. Spear, carpenter work,	15 45
T. B. Blakie, “	4 30
Lewis Hunt, “	2 00
L. Arnold, “	1 75
G. W. Lawson, carpenter work,	1 75
G. T. Burnham & Co., balance for repairs on police station,	280 10
E. D. Sawyer & Co., lumber,	2 26
H. W. Raymond, hardware, etc.	15 47
Howe & Flint, “	13 07
Charles Holmes & Son, “	4 75
D. A. Sanborn, repairs,	7 80
E. S. Bailey, repairing clocks,	2 50
Frost & Adams, engineers' mate- rials, etc.	56 37
E. W. Drake, repairing gas fix- tures,	5 70
R. H. Drake, pump, etc.	12 00
Boston Belting Co., packing,	1 00
R. M. Yale & Co., awning,	6 00
J. Baker & Co., line,	2 88
S. D. Carter, refreshments,	20 00
Geo. H. Gould, spring punch,	75
Town of Wakefield, tax on gravel land,	19 76
Chas. Robinson, Jr., services in Dickerman case,	282 00
Thos. Casey, injury on highway,	75 00
W. S. Barnes, boxes,	6 00
Benj. Almy, services as expert,	17 90
Post 139, G. A. R., for Memorial Day,	300 00
Norton Bros., funeral pillar,	25 00
Chas. Williams, Jr., rent of tele- phone,	70 00
Heliotype Printing Co., printing map,	25 00
Sewer Assessment account, as- sessment on sewer,	66 67
<i>Amount carried forward,</i>	<hr/> \$3,628 06

<i>Amount brought forward,</i>	\$3,628 06
City of Boston, water rate,	50 00
S. D. Kelley, plans and specifications,	80 00
J. Bartley, soap, etc.	2 92
Geo. H. Cowdin, drugs,	3 10
J. J. & M. F. Fenelon, alcohol, etc.	1 90
W. Schuebeler, fans,	1 05
F. G. Williams, housing coal,	4 00
return of births,	125 00
H. B. Runey, return of deaths.	36 00
P. H. Rafferty & Co., return of deaths,	25 00
C. H. Lockhart, return of deaths,	15 25
J. W. Coveney, " "	2 75
A. S. Pratt & Son, bank-note detector,	2 00
J. E. Marden, ringing bells,	3 00
J. F. Hunt, " "	3 00
W. S. Walker, shellacing floors,	6 93
S. Dodge, use of wagon,	7 00
S. Dodge, brick,	1 80
Osgood & Hart, castings,	10 00
H. Wellington & Co., fuel,	155 59
W. J. London, expressing,	13 40
Stilphen & Co., " "	50
Douglas Frazar, administering oaths, as Justice of the Peace,	37 00
Douglas Frazar, salary as clerk of Committee on Indigent Soldiers and Sailors,	100 00
B. F. Johnson, posting notices,	7 00
James Smith, " "	4 00
Henry Shaw, " "	4 00
C. H. Stone, for land taken for sewer purposes,	216 25
G. W. Manning, labor on flag-staff,	42 50
B. F. Ricker, repairing flag-staff,	4 00
J. W. Spear, labor,	25 10
<i>Amount carried forward,</i>	<u>\$4,618 10</u>

<i>Amount brought forward,</i>	\$4,618 10	
H. F. Maynard, labor,	21 00	
J. M. Coburn, “	16 00	
Chas. Kenrick, “	4 50	
L. W. Manning, “	4 75	
Robert Thompson, cleaning,	12 00	
Joseph Young, “	3 50	
Ellen Barry, “	7 60	
Mrs. Lincoln, “	2 50	
A. L. Sanborn, carriage-hire,	18 00	
L. H. Brown, “	13 00	
H. A. Pratt, “	11 00	
J. E. Maynard, “	10 00	
S. J. Wood, keys, etc.	5 00	
Sanford Hanscom, medical services,	4 00	
Cambridge Gaslight Co., gas,	344 45	
Engineer's assistants, car fares, etc.	18 94	
Ward officers,	124 00	
Patrick Ryan, labor,	24 37	
J. C. Davidson, “	16 50	
J. C. Davidson, doorkeeper for assessors,	15 00	
Mrs Charles Trull, repairing flag,	3 00	
Jairus Mann, amount paid witness fees,	54 45	
Jairus Mann, amount paid repair- ing flag-staff,	88	
Jairus Mann, amount paid washing,	15 00	
Jairus Mann, watching at City Hall,	65 00	
Sturtevant Bros., poultry for Thanksgiving distribution,	175 00	
John C. Magoun, sealer of weights and measures,	100 00	
Charles A. Small, pound-keeper,	25 00	
Robert L. Spear, services as ex- pert, examining treasurer's books,	1,194 00	
	<hr/>	
	\$6,926 54	
MISCELLANEOUS (WATERING STREETS), cost to the city for watering,	1,528 00	
	<hr/>	
	\$8,454 54	

MISCELLANEOUS (WATERING STREETS).

Credit.

CASH received of sundry persons as their proportional part of the cost of watering,	\$2,131 40
MISCELLANEOUS, cost to the city for watering,	1,528 00
	<hr/>
	\$3,659 40

Debit.

CASH paid Chas. Faulkner, watering,	\$433 60
T. F. Crimmings, “	397 65
J. Downey, “	327 93
J. Murphy, “	397 14
J. McCauley, “	350 99
J. Welch, “	376 17
Highways account, painting carts,	18 85
White & Wiley, paints,	6 61
Seward Dodge, blacksmithing,	8 93
M. Lynch, “	1 25
D. W. Smith, lettering carts,	6 00
J. Boyd & Sons, hose,	25 00
Lamprell & Marble, hose,	3 38
C. Holmes & Son, repairing hose,	7 75
T. B. Wilson, “ “	2 25
J. O. Hayden & Co., advertising,	4 75
Haskell Bros. “	4 75
W. P. Mitchell, measuring streets,	8 00
Water Services account, repairing stand pipe,	44 40
City of Boston, water,	1,134 00
J. P. Prichard, superintendence,	100 00
	<hr/>
	\$3,659 40

OVERLAY AND ABATEMENT.

Credit.

TAXES, amount added to the amount of the taxes assessed, as fractional divisions, for convenience in the apportionment,	\$4,805 53
EXCESS AND DEFICIENCY, balance to debit of account,	6,945 40
	<hr/>
	\$11,750 93

**Debit.**

TAXES, for abatement on taxes,	\$11,417 57	
REAL ESTATE LIENS, abated,	257 23	
CASH paid abatement on tax title released,	76 13	
	<hr/>	11,750 93

POLICE.**Credit.**

APPROPRIATIONS, amount assessed,	\$22,500 00
CASH received of Lebbeus Stetson, Clerk of the Court, for officers' fees, etc.	1,300 75
	<hr/>
	\$23,800 75

Debit.

CASH paid M. C. Parkhurst, Chief,	\$1,400 00
R. R. Perry, Captain,	1,100 00
Samuel R. Dow, Sergeant,	950 00
C. C. Folsom, "	927 50
S. A. Brown, patrolman,	912 50
Geo. W. Bean, "	912 50
C. D. Clark, "	400 00
N. F. Caswell, "	912 50
Isaac S. Campbell, patrolman,	912 50
C. C. Cavanagh, "	912 50
Albert Fisk, "	912 50
J. E. Fuller, "	912 50
John Hafford, "	910 00
M. H. Kingsley, "	912 50
Ivan Loughton, "	912 50
Howard Lowell, "	912 50
John H. McGarr, "	912 50
Edward McGarr, "	912 50
J. W. Oliver, "	912 50
S. C. Rollins, "	912 50
F. W. Slade, "	912 50
P. W. Skinner, "	907 50
	<hr/>
Amount carried forward,	\$20,282 50

<i>Amount brought forward,</i>	\$20,282 50
A. L. Staples, patrolman,	912 50
S. H. Whitcomb, “	912 50
J. B. Young, “	502 50
B. F. Sheridan, “ (special),	112 00
M. C. Parkhurst, lockup keeper,	200 00
“ “ paid telegraphing,	2 32
A. L. Sanborn, board of horse,	217 06
S. Dodge, horseshoeing,	21 70
Chas. Maguire, horseshoeing,	2 00
Sturtevant Bros., crackers, cheese, etc.	152 20
J. Bartley, crackers, cheese, etc.	3 33
J. J. Giles, washing, etc.	68 85
Guild & Delano, badges, etc.	40 10
S. R. Dow, badge,	2 00
N. F. Caswell, travelling expenses,	23 76
C. C. Folsom, “ “	46 60
C. C. Cavanagh, “ “	4 65
S. D. Carter, meals furnished,	4 50
L. Arnold, carpenter work,	6 60
J. O. Hayden & Co., printing,	2 00
M. R. Warren, stationery,	28 33
C. M. Blake, newspapers,	11 25
Little, Brown & Co., book,	5 50
W. W. Dow, medical attendance,	4 00
L. H. Brown, carriage hire,	24 00
H. D. & W. S. Durgin, ice,	30 00
Union Glass Co., lanterns,	12 00
Chas. Williams, Jr, rent of tele- phone,	81 50
T. B. Wilson, harness work,	75
Pollard, Alford & Co., strap,	2 75
S. O. Aborn, wreath,	2 00
Scovill Manufacturing Co., buttons,	9 00
Geo. H. Cowdin, sponge, etc.	6 60
S. E. Parkhurst, board of Mrs. Brennan,	2 50
A. F. Mentzer, teaming,	2 00
<i>Amount carried forward,</i>	\$23,741 85

<i>Amount brought forward,</i>	\$23,741 85	
Geo. S. Adams, use of team,	50	
O. Cunningham, carrying criminal to station,	1 50	
	<hr/>	
	\$23,743 85	
EXCESS AND DEFICIENCY, balance to credit of account,	56 90	
	<hr/>	
		\$23,800 75
		<hr/>

POLICE STATION INCIDENTALS.

Credit.

APPROPRIATIONS, amount assessed,		\$2,300 00
CASH received of —		
Post 139 G. A. R., rent of hall to Oct. 1,	\$106 25	
S. H. Libby, amount received by him for use of hall,	168 50	
return premium and policies cancelled,	67 00	
Ladies' Relief Corps, W. C. Kinsley Post 139, G. A. R., use of hall,	40 00	
Somerville Charity Club, use of hall,	15 00	
H. W. Raymond, amount of bill approved a second time and paid,	4 20	
	<hr/>	
		400 95
EXCESS AND DEFICIENCY, balance to debit of account,		249 36
		<hr/>
		\$2,950 31

Debit.

CASH paid J. J. Giles, janitor,	\$800 00
labor, whitening, etc.	50 00
substitute during vacation,	13 00
Cambridge Gas Light Co., gas,	620 94
H. Wellington & Co, fuel,	384 91
City of Boston, water rates,	46 00
Wallberg & Woehrn, frescoing,	116 54
J. Q. Twombly, painting,	99 71
	<hr/>
<i>Amount carried forward,</i>	\$2,131 10

<i>Amount brought forward,</i>	\$2,131 10
L. Arnold, carpenter work,	47 75
A. Caswell, " "	30 26
A. M. Sibley, mason work,	25 50
E. Cahill, " "	2 00
C. A. Legallee, plumbing,	60 16
Sullivan & Co., " "	1 88
E. Early, repairing roof,	36 60
E. W. Drake, repairing gas fixtures,	1 00
M. W. Pierce & Co., repairing heating apparatus,	36 16
A. A. Sanborn, scraper,	3 00
D. A. Sanborn, repairing drain,	6 25
E. H. Brabrook, repairing furniture,	36 50
Flynn Bros., repairing lounge,	5 00
Boston Belting Co., hose,	19 50
Howe & Flint, repairing hose, etc.	4 89
H. W. Raymond, hardware,	29 41
Sturtevant Bros., basket, soap, etc.	22 50
C. Holmes & Son, dippers, etc.	5 00
Bishop & Bro., steps,	2 00
Public Park Maintenance account, lawn mower,	20 00
W. B. Hastings & Co., premium of insurance,	162 00
W. C. Crane, premium of insur- ance,	20 00
W. Schuebeler, towels,	3 00
J. H. Brooks, dry goods,	1 52
Murphy, Leavens & Co., brushes,	2 11
Boston Gas Improvement Co., on account of carburetter,	100 00
B. F. Ricker, labor on carburetter,	22 00
W. D. Hayden, oil for carburetter,	113 22
	<hr/>
	\$2,950 31

PROPERTY AND DEBT BALANCE.

Credit.

REDUCTION OF FUNDED DEBT, amount of debt paid in 1879,	\$69,854 00
BALANCE to debit in account of 1880,	463,600 00
	<hr/>
	\$533,454 00

	Debit.	
BALANCE, from 1878,	\$465,770 24	
APPROPRIATIONS,	58,000 00	
REDUCTION OF FUNDED DEBT,	9,683 76	
		<u>533,454 00</u>

PUBLIC LIBRARY.

	Credit.	
BALANCE from 1878,		\$478 06
APPROPRIATIONS, amount assessed,		1,200 00
CASH, received of —		
The county treasurer, return on		
dog licenses for 1878,	\$936 10	
The librarian, for fines,	208 00	
catalogues,	52 20	
		<u>1,196 30</u>
		\$2,874 36

	Debit.	
CASH paid Lockwood, Brooks & Co.,		
books, etc.	\$554 14	
Estes & Lauriat, books, etc.	132 71	
Little, Brown & Co., books,	12 00	
F. Leypoldt, library journal,	5 00	
C. Scribner's Sons, books,	7 50	
Lee & Shepard, books,	7 44	
D. Clapp, books,	5 00	
Geo. H. Cowdin, directory,	2 00	
Thos. Groom & Co., stationery,	9 50	
W. J. London, expressing,	28 85	
W. C. Crane, premium of insurance,	18 75	
Rockwell & Churchill, printing,	522 85	
Babb & Stephens, “	193 00	
H. A. Adams, librarian,	700 00	
L. Stevens, assistant librarian,	350 00	
E. G. Colman, assistant,	175 18	
C. W. Merritt, “	47 45	
L. A. Manning, “	34 50	
H. F. Maynard, “	29 85	
		<u>\$2,835 72</u>
BALANCE to credit in account of 1880,	38 64	
		<u>\$2,874 36</u>

PUBLIC PROPERTY.

Credit.

BALANCE to debit in account of 1880,	\$1,121,400 00
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Debit.

BALANCE from 1878,	\$1,121,400 00
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PUBLIC PARK.

Credit.

BALANCE from 1878,	\$33,709 95
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Debit.

PUBLIC PARK BETTERMENT ASSESS- MENTS abated,	\$2,098 84	
BALANCE to credit in account of 1880,	31,611 11	
		\$33,709 95

PUBLIC PARK BETTERMENT ASSESSMENTS.

Credit.

CASH received of sundry persons, assessments,	\$7,850 11
PUBLIC PARK, abatements,	2,098 84
BALANCE to debit in account of 1880,	29,067 84
	\$39,016 79

Debit.

BALANCE from 1878,	\$39,016 79
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PUBLIC PARK MAINTENANCE.

Credit.

APPROPRIATIONS, amount assessed,	\$1,200 00
CASH received for grass,	\$32 00
of Police Station Inci- dentals account, for lawn mower,	20 00
	52 00
	\$1,252 00

Debit.

CASH paid M. W. Murphy, labor, etc.	\$585 42
T. Murphy, Jr., labor,	150 01
M. Neville, “	63 76
Patrick Sullivan, “	2 00
M. Gill, labor and use of horse,	32 26
McCarty Bros., “ “	1 50
L. Knowles, labor,	1 50
Geo. E. Bezanson, labor,	1 50
G. W. Prichard, manure,	24 00
G. W. Prichard, use of team,	3 13
T. F. Crimmings, stone, etc.	208 40
T. Murphy, sods,	43 00
J. Breck & Sons, lawn mower,	100 00
J. Breck & Sons, seeds, etc.	5 48
Underhill Bros., repairing lawn mower,	3 25
James Sutton & Co., sharpening lawn mowers,	3 50
Fred Belanger, wrench,	50
Bishop & Bros., ladder,	2 00
J. C. Dyer & Co., repairing lan- tern,	5 00
Alvah Walker & Co., oil,	6 25
E. R. Perham, expressing,	2 45
	<hr/>
	\$1,244 91

EXCESS AND DEFICIENCY, balance to credit of account,	7 09
	<hr/>

\$1,252 00
REAL ESTATE LIENS.**Credit.**

CASH received of sundry persons for tax titles released,	\$6,138 39
OVERLAY AND ABATEMENT, abated,	257 23
HIGHWAYS (FLORENCE STREET), abated,	76 30
BALANCE to debit in account of 1879,	18,822 21
	<hr/>
	\$25,294 13

	Debit.	
BALANCE from 1878,		\$19,253 44
TAXES, titles deeded to the city for non-payment of taxes,		4,615 50
HIGHWAY BETTERMENT ASSESSMENTS, title deeded to the city for non-payment of assessment,		150 30
SIDEWALK ASSESSMENTS, title deeded to the city for non-payment of assessment,		23 90
INTEREST on titles deeded to the city,		739 24
MISCELLANEOUS. costs on titles deeded to the city,		511 75
		<hr/>
		\$25,294 13

REDUCTION OF FUNDED DEBT.

	Credit.	
APPROPRIATIONS. amount authorized by loans,		\$58,000 00
PROPERTY AND DEBT BALANCE, unappropriated funds in the treasury,		9,683 76
EXCESS AND DEFICIENCY, transferred,		2,170 24
		<hr/>
		\$69,854 00
	Debit.	
PROPERTY AND DEBT BALANCE, amount of the funded debt paid in 1879,		\$69,854 00

SALARIES.

	Credit.	
APPROPRIATIONS, amount assessed,		\$16,450 00
EXCESS AND DEFICIENCY, balance to debit of account,		349 32
		<hr/>
		\$16,799 32
	Debit.	
CASH paid George A. Bruce, Mayor,		\$900 00
Chas. E. Gilman, City Clerk,		2,100 00
Aaron Sargent, City Treasurer,		2,900 00
Treasurer of Commissioners of Sinking Funds,		200 00
		<hr/>
<i>Amount carried forward,</i>		\$6,100 00

<i>Amount brought forward,</i>	\$6,100 00	
Geo. A. Kimball, City Engineer,	1,900 00	
S. C. Darling, City Solicitor,	1,800 00	
E. L. White, City Physician,	350 00	
J. F. Couch, " "	350 00	
D. Frazar, City Auditor, "	350 00	
D. Frazar, Clerk of Common Council,	200 00	
Geo. I. Vincent, clerk to Assessors and Committees,	1,100 00	
Jairus Mann, City Messenger,	1,250 00	
Thomas Cunningham, Assessor,	500 00	
F. G. Williams, " "	500 00	
Geo. W. Hadley, " "	500 00	
B. F. Thompson, Assistant Asses- sor,	200 00	
George Smith, Assistant Assessor,	200 00	
R. A. Melvin, " "	200 00	
S. H. Holland, " "	200 00	
Engineers' Assistants,	1,099 32	
	<hr/>	\$16,799 32

SCHOOL CONTINGENT.

Credit.

APPROPRIATIONS, amount assessed,		\$9,000 00
CASH received —		
Of sundry persons, school books furnished by the School Com- mittee,	\$24 30	
Of the Superintendent of Schools, amount received by him, tuition of non-resident pupils,	112 00	
	<hr/>	136 30
EXCESS AND DEFICIENCY, balance to debit of account,		274 90
		<hr/>
		\$9,411 20

Debit.

CASH paid Joshua H. Davis, salary as Superintendent of Schools,	\$1,800 00
for postage stamps,	6 50
	<hr/>
<i>Amount carried forward,</i>	\$1,806 50

<i>Amount brought forward,</i>	\$1,806 50
E. A. Smith, salary as truant officer,	775 00
Janitors,	3,281 12
Charlestown Gas Company, gas,	182 72
Cambridge Gas Light Company, gas,	129 04
Geo. B. King, books and printing,	406 37
J. L. Hammett, stationery, etc.	179 90
Knight, Adams & Co., stationery, etc.	492 87
A. A. Perry, books,	74 60
E. G. Dodge, “	81 15
W. C. Clark, “	30 29
Lee & Shepard, books,	30 04
Thos. T. Bailey, “	74 70
F. W. Bird, “	10 28
F. E. Studley, “	3 47
A. C. Stockin, “	6 53
L. A. Dimond, “	82
J. W. C. Gilman & Co., writing books,	219 23
Thos. Groom & Co., pens,	26 40
J. O. Hayden & Co., printing,	186 25
Rand, Avery & Co., printing,	91 20
E. F. Taylor, blackboard, etc.	15 00
N. S. Dearborn, diplomas,	52 20
R. Torrey, lettering diplomas,	25 00
Nichols & Hall, slates,	6 08
J. A. Stetson, condenser,	7 15
H. B. & W. O. Chamberlain, chemical apparatus,	11 26
Murphy, Leavens & Co., brushes, etc.	134 70
H. C. Howes, brushes,	16 32
O. F. Howe, brooms,	3 00
Patrick Lynam, mats,	105 84
J. E. Parsons, pails,	4 08
C. B. Knowles, “	2 70
J. M. Coburn, rent and fuel,	225 27
D. McLeod, keys,	2 50
<i>Amount carried forward,</i>	<u>\$8,699 58</u>

<i>Amount brought forward,</i>	\$8,699 58
S. J. Wood, repairing locks,	4 00
T. E. Spencer, picking lock,	50
Stevens & Scofield, carpenter work,	28 62
S. Perry, “	5 27
M. H. Norwood, “	2 00
C. L. Lacount, amount paid car- penter,	18 20
J. C. Snow, repairing gong,	5 00
F. W. Johnson & Co., varnishing,	1 25
Hennessey & Harrington, sponge,	3 38
Fred E. Phelps, rubber stamp,	5 00
B. F. Sheridan, fuel,	4 00
Rand & Byam, soap,	18 00
J. C. Davidson, “	5 48
D. H. Rinn, soap and oil,	13 45
G. W. Bartlett, repairing clocks,	9 50
E. S. Bailey, repairing clocks,	2 50
C. Holmes & Son, stove work, etc.	24 15
W. L. Snow, “ “	19 93
City of Boston, water rates,	346 74
City of Cambridge, “	19 00
Geo. H. Brown, tuning pianos,	8 00
E. S. Daniels, “	6 00
Robert Thompson, moving piano,	1 50
J. Breck & Sons, wheelbarrow,	4 00
H. A. Pratt, carriage hire,	10 00
W. R. Cann, labor,	11 45
H. W. Raymond, hardware, .	45
C. W. Meyer, electric machine,	26 50
Wm. Whitten, board and rent,	60 00
Barker & Tibbetts, expressing,	22 40
Stilphen & Co. “	9 25
Thorpe Express, “	7 75
H. M. Beals, “	5 00
W. J. London, “	1 10
E. R. Perham, “	70
J. W. Mauning, “	60
H. C. Buck, amount paid express,	95

\$9 411 20

SCHOOL FUEL.

Credit.

APPROPRIATIONS, amount assessed,	\$3,000 00
EXCESS AND DEFICIENCY, balance to debit of account,	40 71
	<hr/>
	\$3,040 71

Debit.

CASH paid H Wellington & Co., fuel,	\$2,910 61
School-house Repairs account, bill	
for fuel paid,	103 00
F. G. Williams, weighing,	25 50
J. O. Hayden & Co., advertising,	1 60
	<hr/>
	\$3,040 71

SCHOOL-HOUSE REPAIRS.

Credit.

APPROPRIATIONS, amount assessed,	\$5,500 00
CASH received of the Committee on	
Public Property, amount re-	
ceived for use of halls,	\$132 25
Catholic Society, use of Forster	
Hall,	260 00
School Fuel account, bill paid for	
fuel,	103 00
	<hr/>
	495 25
EXCESS AND DEFICIENCY, balance to	
debit of account,	2,747 39
	<hr/>
	\$8,742 64

Debit.

CASH paid E. Walker, carpenter work,	\$272 66
I. B. Walker, " "	11 55
Geo. W. Trefren, " "	953 45
J. W. Spear, " "	15 00
A. Caswell, " "	106 63
Wm. A. Muzzey, " "	823 78
Stevens & Scofield, " "	227 64
R. A. Melvin & Co., " "	351 17
Z. Flemming, " "	59 33
	<hr/>
Amount carried forward,	\$2,321 21

<i>Amount brought forward,</i>	\$2,321 21
J. D. Hills, carpenter work,	69 26
G. T. Burnham & Co. carpenter work,	9 56
W. E. Jones, " "	13 00
J. C. Snow, " "	3 26
L. Arnold, " "	3 25
N. C. Barker, " "	1 20
Geo. T. Willoughby, " "	2 67
D. Brooks, mason work,	345 56
P. & M. Terry, " "	455 68
Patrick Terry, " "	37 73
Rufus Winn, " "	8 59
B. F. Ricker, " "	15 50
Chas. W. Fertig, whitewashing,	50 00
J. Gibbons, " "	23 00
P. H. Keefe, " "	5 00
A. M. Sibley, plastering,	3 00
D. P. Bucknam, " "	15 25
Geo. W. Remick, " "	240 00
Chas. A. Mongan, laying drains,	160 00
D. A. Sanborn, repairing " "	14 50
J. Q. Twombly, painting and glazing,	111 98
J. C. Dyer & Co., painting and glazing,	82 11
Chas. H. Tufts, painting and glazing,	137 50
Ramsay Clarke, glazing,	10 26
J. T. Crosby, " "	6 50
D. W. McDermott, painting,	75 23
W. S. Walker, " "	7 25
F. W. Johnson & Co., painting,	8 00
L. C. Seavey, repairing roofs,	10 31
Edward Earley, " "	53 60
Revere Roofing Co., repairing roofs,	13 50
A. E. Rowe, bells,	22 60
O. Nowell, adjusting bells,	18 25
Howe & Flint, stove, work, etc.	593 45

Amount carried forward, \$4,947 76

<i>Amount brought forward,</i>	\$4,947 76
C. Holmes & Son, stove, work, etc.	117 32
W. L. Snow, stove, work, etc.	407 71
J. A. Merrifield, “ “	160 04
Richard Dowd, “ “	27 55
J. A. Durell, “ “	64 57
A. A. Sanborn, repairing heating apparatus,	123 27
C. A. Legallee, plumbing,	96 62
J. E. Parsons, gas pipe, etc.	6 80
E. W. Drake, gas fittings,	1 30
Chas. Pierce, “ “	2 25
Seward Dodge, blacksmithing,	11 38
E. O'Brien, “	1 75
C. Horton, well and pump,	36 00
Globe Gas Light Co., lanterns, etc.	11 97
S. J. Wood, repairing locks,	5 25
A. G. Whitcomb, furniture,	511 74
E. Howard & Co., clock,	20 00
E. S. Bailey, clocks and cleaning,	84 25
J. A. Swasey, blackboards,	13 84
J. L. Hammett, “	20 80
H. McElwin, slating blackboards,	35 67
Franklin Tompkins, pump, etc.	18 50
Caleb Kingman, “	29 75
J. W. Leatherbee, lumber,	52 81
S. W. Fuller, “	26 86
E. D. Sawyer & Co., “	118 35
Flynn Bros., window shades,	8 00
Brintnall & Osgood, window shades,	11 57
E. H. Brabrook, carpets,	19 92
Edmands & Co., pipe,	7 80
Sewers account, “	90
Water Service account, pipe,	150 03
M. D. Jones & Co., hose,	17 50
Worthley, Downes & Co., hose,	7 00
<i>Amount carried forward,</i>	\$7,176 83

<i>Amount brought forward,</i>	\$7,176 83
R. H. Drake, hose bib, etc.	2 00
Page & Littlefield, bookcase,	15 00
Union Glass Co., glass,	1 50
J. Y. Brosnahan, cement, etc.	75
McCabe & Timmins, sand,	3 50
W. B. Munroe, Jr., loam,	7 20
J. Breck & Sons, wheelbarrow,	4 00
A. C. Sanborn & Co., well cover,	11 00
Sturtevant Bros., chloride lime,	2 70
T. Murphy, trees,	84 00
B. F. Sheridan, trimming tree,	1 50
F. L. Temple, labor on High School grounds,	25 00
Joseph Young, care of lawn,	30 00
Highways account, teaming, etc.	15 05
A. Simpson, amount paid for pails, etc.	3 25
Mass. School for Blind, repairing piano,	6 00
Walworth Manuf. Co., repairing filters,	1 75
A. M. Prescott, amount paid labor,	6 00
Fred. Belanger, repairing roller holder,	75
J. M. Coburn, cleaning, etc.	10 75
M. Hartness, “	35 65
H. W. Raymond, hardware,	19 23
Russell & Fitch, removing night soil,	159 00
A. L. Sanborn, carriage hire,	10 00
H. Wellington & Co., fuel,	103 00
Sewer Assessment account, assess- ments,	102 84
W. C. Crane, premiums of insur- ance,	60 00
D. O'Brien, gravel, etc.	14 00
Cambridge Gas Light Co., gas,	49 30
Robert Thompson, labor,	45 00

Amount carried forward, \$8,006 55

<i>Amount brought forward,</i>	\$8,006 55	
Frank Eagan, labor,	21 25	
E. Runey, “	1 50	
Geo. Manning, “	11 67	
Estate of C. Tufts, rent,	100 00	
Chas. Robinson, Jr., “	100 00	
West Boston Savings Bank, rent,	116 67	
Daniel Swan, rent,	250 00	
Albert Bryant, “	75 00	
E. W. Cobb, “	60 00	
	<hr/>	\$8,742 64

SCHOOL TEACHERS' SALARIES.

Credit.		
APPROPRIATIONS, amount assessed,		\$59,000 00
EXCESS AND DEFICIENCY, balance to debit of account,		4,833 44
		<hr/>
		\$63,833 44
Debit.		
CASH paid salaries,		63,833 44
		<hr/>

SEWERS.

Credit.		
APPROPRIATIONS, amount assessed,		\$7,500 00
CASH received of School-House Repairs		
account, pipe,	\$0 90	
Highways account, pipe,	2 25	
Committee on Sewers, amount		
received by them for pipe,	45	
	<hr/>	3 60
SEWER ASSESSMENTS, assessments levied,		13,449 13
EXCESS AND DEFICIENCY, transferred,	5,600 00	
Balance to debit of account,	3,361 97	
	<hr/>	8,961 97
		<hr/>
		\$29,914 70
Debit.		
CASH paid laborers,	\$2,079 65	
Fiske & Colman, pipe,	1,639 28	
D. W. Lewis, “	1,287 67	
H. Wellington & Co., cement,	66 00	
	<hr/>	
<i>Amount carried forward,</i>	\$5,072 60	

<i>Amount brought forward,</i>	\$5,072 60
Osgood & Hunt, castings,	161 17
Walworth Mfg. Co., castings,	46 21
S. W. Fuller, lumber,	157 99
G. W. Wyatt, brick,	95 25
G. W. Wyatt & Son, brick,	29 00
Bay State Brick Co., “	31 62
A. Parker, catch-basin stone,	182 00
J. Leland, cesspool covers,	9 55
M. F. Whitten & Co., rope,	6 60
Highways account, stone and labor,	2 50
M. Day & Co., pipe and cement,	7 20
H. W. Raymond, hardware, etc.	23 25
Howe & Flint, “ “	9 21
Ames Plow Co., shovels,	10 80
L. Schorle, pails,	14 50
Water Service account, repairing pipe, etc.	145 81
Dover Stamping Co., bolts,	32
S. Dodge, blacksmithing,	10 59
J. Bartley, salt, etc.	1 52
D. A. Sanborn, tool chest and labor,	18 00
D. Brooks, mason work,	52 80
Philip Eberle, boots and shoes,	22 25
Geo. H. Cowdin, disinfecting powder,	50
J. M. Whittemore & Co., stationery,	9 00
J. A. Cummings & Co., printing,	3 75
J. M. Jacobs, lithogram,	7 00
Stevens Bros., oil, etc.	58
Knowles Bros., “	12
J. O. Hayden & Co., advertising,	60 15
Haskell Bros., “	40 00
A. M. Prescott, teaming,	5 00
Thorpe Express, expressing,	50
C. N. Hale, labor,	71 25
F. M. Burrows, labor,	10 50
E. F. Brigham, inspector,	67 50
E. E. Fletcher, “	182 50
H. H. Pike, “	177 00
M. Buttimer, “	75 00
<i>Amount carried forward,</i>	<u>\$6,821 09</u>

<i>Amount brought forward,</i>	\$6,821 09
C. A. Mongan, inspector,	60 00
Engineer's assistants, superin- tending construction of sewers,	496 25
E. Fitzgerald, building catch- basins,	61 00
R. Falvey, building catch-basins,	9 80
Sargent & Adams, land taken,	106 69
Edward Fitzgerald, constructing sewer in George Street,	139 05
in Claremon Street,	612 40
in Cedar Street and High- land Avenue,	1,199 47
in Ivaloo and Park Streets,	2,308 96
in Washington and Line Streets,	644 70
in Broadway Place,	140 25
Maurice Buttimer, constructing sewer in Dover Street,	570 70
Jeremiah McCarthy, constructing sewer in Walnut and Mills Streets,	1,474 23
Maurice Terry, constructing sewer in Dane Court,	458 74
Patrick Terry, constructing sewer in Dane Street,	488 15
in Frost Avenue,	390 76
in Central Street,	466 35
Chas. A. Mongan, constructing sewer in Hamlet Street,	245 35
in Canal Street and Tenney Court,	585 69
Dennis O'Connell, constructing sewer in Park Avenue,	389 21
in Chandler Street,	253 72
in Moore Street,	236 04
in Walnut Street,	362 48
Richard Falvey, constructing sewer in Mead Street,	2,700 94
<i>Amount carried forward,</i>	<hr/> \$21,222 02

<i>Amount brought forward,</i>	\$21,222 02	
Richard Falvey, constructing sewer in Joy Street,	327 30	
in Medford and Adams Streets,	923 31	
in Holland and Elmwood Streets,	3,893 45	
in Newbury Street, reconstructing sewer in Medford Street,	1,510 44	
	828 80	
M. Gill, constructing sewer in Broadway,	433 05	
reconstructing sewer in Broadway,	409 94	
	<hr/>	
	\$29,548 31	
SEWER ASSESSMENTS, assessment abated,	47 53	
SUNDRY PERSONS, sums due and unpaid,	318 86	
	<hr/>	
		\$29,914 70
		<hr/>

SEWERS (BEACON AND ELM STREETS SEWER).

	Credit.	
BALANCE from 1878,		\$7,051 33
CASH received of R. D. Cushing, per- mission to enter sewer,		40 00
		<hr/>
		\$7,091 33

	Debit.	
CASH paid Chas. D. Elliott, engineer- ing,	\$ 32 25	
W. H. Bradley, service in Sulli- van case,	50 00	
Geo. A. Sawyer, services in Sulli- van case,	40 00	
Arthur Hodges, services in Sulli- van case,	121 50	
O. P. Roberts, services in Sulli- van case,	100 00	
	<hr/>	
<i>Amount carried forward,</i>	\$443 75	

<i>Amount brought forward,</i>	\$443 75	
Allen Breed, services in Sullivan case,	49 80	
F. H. Barnes, services in Sullivan case,	14 61	
John H. Soper, services in Sullivan case,	8 25	
F. B. Edwards, services in Sullivan case,	7 80	
Jairus Mann, amount paid witness fees,	13 60	
H. H. Pike, services as expert,	100 00	
J. Hale, use of barn for storage,	40 00	
	<hr/>	
	\$677 81	
BALANCE to credit in account of 1880,	6,413 52	
	<hr/>	
		\$7,091 33
		<hr/>

SEWER ASSESSMENTS.

Credit.

SEWERS, assessments abated,	\$47 53	
CASH received of sundry persons, assessments,	6,695 93	
BALANCE to debit in account of 1880,	11,252 94	
	<hr/>	
		\$17,996 40

Debit.

BALANCE from 1878,	\$4,547 27	
SEWERS, assessments levied,	13,449 13	
	<hr/>	
		17,996 40
		<hr/>

SIDEWALKS.

Credit.

APPROPRIATIONS, amount assessed,	\$2,500 00	
EXCESS AND DEFICIENCY, transferred, *	1,500 00	
CASH received of J. P. Prichard, amount received by him for brick,	9 25	
SIDEWALK ASSESSMENTS, assessments levied,	2,764 51	
	<hr/>	
		\$6,773 76

Debit.

CASH, paid laborers,	\$668 50
John Turner & Co., edgestones,	
etc.	2,406 07
O. S. Foster, brick,	1,516 62
C. L. Heywood, gravel,	190 40
S. W. Fuller, lumber,	76 81
Benj. Hadley, brick,	60 75
W. A. Sanborn, “	177 75
Stevens & Scofield, carpenter work,	15 20
H. G. Collins, blacksmithing,	50 35
W. M. Hadley, cement,	2 70
Cook, Rymes & Co., rammers,	3 50
F. A. Titus, pipe,	2 00
Davis, Stebbins & Co., trowels,	2 00
Christopher Burke, teaming,	16 00
O. Cunningham, “	6 00
Jeremiah McCarty, “	16 00
Geo. W. Prichard, “	67 00
T. F. Crimmins, “	4 00
Martin Gill, “	4 00
Daniel McCarty, “	28 00
J. A. Cummings & Co., printing,	3 25
Highways account, gravel,	54 00
J. O. Hayden & Co., advertising,	49 20
	<hr/>
	\$5,420 10
SIDEWALK ASSESSMENTS, abated,	1 62
EXCESS AND DEFICIENCY, balance to credit of account,	1,352 04
	<hr/>
	\$6,773 76

SIDEWALK ASSESSMENTS.

Credit.

SIDEWALKS, abated,	\$1 62
REAL ESTATE LIENS, title to the city for non- payment of assessment,	23 90
CASH received of sundry persons, assessments,	2,988 29
BALANCE to debit in account of 1880,	2,039 67
	<hr/>
	\$5,053 48

Debit.

BALANCE from 1878,	\$2,288 97	
SIDEWALKS, assessments levied,	2,764 51	
		<u>\$5,053 48</u>

SINKING FUND CONTRIBUTIONS.

Credit.

APPROPRIATIONS, amount assessed,	\$45,525 00
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Debit.

CASH, paid Commissioners of the Sinking Funds,	<u>\$45,525 00</u>
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SOLDIERS' RELIEF.

Credit.

APPROPRIATIONS, amount assessed,	\$1,000 00
EXCESS AND DEFICIENCY, balance to debit of account,	13 59
	<u>\$1,013 59</u>

Debit.

CASH paid Sturtevant Bros., groceries,	
etc.	\$427 81
P. T. O'Brien, groceries, etc.	12 00
J. C. Ellis & Co., "	22 00
Woodbridge & Sargent, groceries,	13 00
H. W. Burgess, "	24 00
J. F. Cole & Co., "	2 50
Hennessey & Harrington, "	4 00
H. B. Shedd, order,	3 00
I. W. Black, groceries,	27 62
J. W. Litchfield, milk,	4 20
J. O. Hayden & Co., stationery,	14 00
H. Wellington & Co., fuel,	149 06
G. M. Winslow & Co., "	20 30
Philip Eberle, boots and shoes,	16 10
John C. Gillis, " "	11 00
L. Buck, shoes,	2 00
Sundry persons, aid,	261 00
	<u>\$1,013 59</u>

SOMERVILLE WATER WORKS.

Credit.

BALANCE from 1878,	\$523 62
EXCESS AND DEFICIENCY, balance to debit of account,	267 94
	<hr/>
	\$791 56

Debit.

CASH paid laborers,	\$539 62
Walworth Manufacturing Co., fittings,	93 97
F. B. Austin & Co., iron,	63 42
S. May & Co., rivets,	21 56
H. Wellington & Co., cement,	67 23
J. C. Story & Co., oil,	5 76
	<hr/>
	\$791 56
	<hr/>

STATE AID.

Credit.

CASH, amount charged in pay roll, not paid,	\$9 00
STATE OF MASSACHUSETTS. — STATE AID, amount paid in 1879, charged to the State,	4,303 00
	<hr/>
	\$4,312 00

Debit.

CASH paid monthly pay rolls for aid,	\$4,312 00
	<hr/>

STATE OF MASSACHUSETTS.—INDIGENT SOLDIERS AND SAILORS.

Credit.

BALANCE, amount to debit in account of 1880,	\$302 50
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Debit.

INDIGENT SOLDIERS AND SAILORS, one half amount paid in 1879, as per account,	\$302 50
	<hr/>

STATE OF MASSACHUSETTS.—STATE AID.

Credit.

CASH received of the State Treasurer, amount paid in 1878,	\$4,308 50
BALANCE Dec. 31, 1879, due from the State, Dec. 1, 1880, to debit in account of 1880,	4,303 00
	<hr/>
	\$8,611 50

Debit.

BALANCE from 1878,	\$4,308 50	
STATE AID, amount paid in 1879, as per account,	4,303 00	
	<hr/>	\$8,611 50
		<hr/>

STATE OF MASSACHUSETTS.

Credit.

TAXES, amount assessed for State Tax,	\$7,720 00
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Debit.

CASH paid State Tax,	\$7,720 00
	<hr/>

STREET LIGHTS.

Credit.

APPROPRIATIONS, amount assessed,	\$7,500 00
CASH received of Committee on Street Lights, amount received by them for eighteen lamp-posts,	\$340 00
M. L. King, lamp-post broken,	17 00
Boston Ice Co., “ “	8 50
	<hr/>
	365 50
	<hr/>
	\$7,865 50

Debit.

CASH paid Cambridge Gas Light Com- pany, gas,	\$2,016 50
labor on pipes, etc.	49 51
Charlestown Gas Company, gas,	1,577 68
labor on pipes, etc.	23 61
	<hr/>
Amount carried forward,	\$3,667 30

<i>Amount brought forward,</i>	\$3,667 30	
Hugh Blackwell, lighting,	2,046 55	
labor on pipes, posts, etc.	143 20	
Globe Gas Light Company, lighting,	659 56	
for lamp-posts, lanterns, etc.	387 15	
A. H. Weld, alcohol,	52 85	
Hills, Turner & Co., glass,	30 76	
Coy & Tuttle, lamp pattern,	1 00	
S. Dodge, repairing lantern,	1 00	
Osgood & Hart, castings,	2 44	
Bishop & Bro., ladders,	15 09	
J. S. Allen & Co., labor,	1 00	
J. P. Williams, oil,	40	
	<hr/>	
	\$7,008 30	
EXCESS AND DEFICIENCY, balance to		
credit of account,	857 20	
	<hr/>	
		\$7,865 50
		<hr/>

SUNDRY PERSONS.

Credit.

SEWERS, sums approved in favor of sundry persons,		
and unpaid,		\$318 86
INTEREST, coupons due and unpaid,		925 00
		<hr/>
		\$1,243 86

Debit.

BALANCE, to credit in account of 1880,		\$1,243 86
		<hr/>

SUPPORT OF POOR.

Credit.

APPROPRIATIONS, amount assessed,		\$13,000 00
CASH received for support of paupers : —		
Of city of Boston,	\$1,152 11	
“ Cambridge,	196 33	
“ Chelsea,	61 63	
“ Lawrence,	157 40	
“ Salem,	16 05	
Town of Abington,	249 54	
“ Bridgewater,	112 80	
	<hr/>	
<i>Amount carried forward,</i>	\$1,945 86	

<i>Amount brought forward,</i>	\$1,945 86	
Town of Dracut,	81 82	
“ Dedham,	33 40	
“ Medford,	22 95	
“ Melrose,	106 30	
“ Milford,	3 00	
“ Nantucket,	73 18	
“ Natick,	20 40	
“ Oakham,	34 60	
“ Truro,	25 30	
“ Woburn,	102 70	
State of Massachusetts,	2,083 13	
“ “ burials,	144 00	
		<hr/>
		4,676 64
		<hr/>
		\$17,676 64

Debit.

CASH paid Conant & Sanborn, groceries,	\$939 14
Belknap & Boynton, provisions, etc.	1,902 93
Roberts, Cochran & Co., flour, etc.	224 65
T. N. Snow, potatoes,	417 22
T. A. Shedd, crackers,	242 72
Thurston, Hall & Co., crackers,	7 80
J. H. Colbath & Co., beef,	23 45
A. J. Barnes, beef,	4 98
F. N. Lewis, beef, etc.	22 28
Sturtevant Bros, beef, etc.	336 14
orders,	129 65
L. W. White, orders,	32 90
Carpenter Bros., orders,	6 50
F. W. Green & Co., orders,	1 50
H. W. Burgess, “	7 60
M. V. & J. Hennessey, orders,	8 00
A. S. Emerson & Co., “	5 50
C. A. Small, “	55 25
City of Boston, water rates,	6 00
	<hr/>
<i>Amount carried forward,</i>	\$4,374 21

<i>Amount brought forward,</i>	\$4,374 21
O. F. Howe, baskets,	27 75
Chas. O'Neil, soap,	84 05
Rand & Byam, "	74 00
M. R. Warren, stationery,	29 30
E. S. Daniels, stationery, etc.	7 50
J. O. Hayden & Co., printing,	10 00
A. L. Haskell & Co., "	9 50
Boston Scale Co., scales,	7 00
G. H. Cowdin, nursing bottle,	50
M. Liston, nursing,	20 00
Ansel Lewis, amount paid nursing and transportation of paupers,	27 82
M. G. Steele, teaming,	21 51
J. F. Sampson & Co., bags,	6 62
L. F. Stone, "	6 36
P. Shannon, milk,	36 90
Sturtevant Bros., milk,	9 89
Thos. Cunningham, "	4 06
T. Conners, "	1 96
H. W. Raymond, hardware, etc.	3 61
C. Holmes & Son, stove, etc.	9 00
Howe & Flint, stove lining,	2 50
J. A. Merrifield, grate,	75
Flynn Bros., bedding, etc.	15 00
J. J. Giles, washing, meals fur- nished, etc.	9 00
H. B. Runey, undertaker's ser- vices,	187 75
P. H. Rafferty & Co., undertaker's services,	258 50
W. A. Flaherty, undertaker's ser- vices,	79 00
John Reed, undertaker's services,	10 00
Hamblin & Brown, expressing,	4 00
Stilphen & Co., "	3 00
Thorpe's Express, "	6 15
N. B. Hallett, whitewashing,	5 00
L. Arnold, carpenter work,	1 87

Amount carried forward, \$5,354 06

<i>Amount brought forward,</i>	\$5,354 06
C. H. North & Co., pork,	23 50
F. E. Robie, provisions,	1 50
John Monahan, moving furniture,	2 50
Philip Eberle, boots and shoes,	1,176 85
J. W. Brine, clothing,	4 00
J. H. Brooks, dry goods,	223 65
W. Schuebeler, “	4 52
S. J. Wood, filing saw, etc.	3 00
Clark Bennett, premiums of insurance,	25 00
H. Wellington & Co., fuel,	2,265 00
G. M. Winslow & Co., “	2 25
J. C. Davidson, teaming and delivering coal and wood,	477 63
J. F. Ayer, wood,	131 06
Z. P. Foster, “	99 75
S. P. Taylor, “	55 50
P. Curtis, fish,	241 25
Hewey, Skillins & Co., meal,	52 40
State of Mass., support of paupers,	427 54
State Hospital for the Insane, support of paupers,	547 59
Taunton Lunatic Hospital, support of paupers,	174 98
Worcester Lunatic Hospital, support of paupers,	1,180 59
City of Boston, support of paupers,	823 08
City of Cambridge, support of paupers,	116 40
City of Lawrence, support of paupers,	157 50
City of Lowell, support of paupers,	140 21
“ Lynn, “ “	17 75
“ Haverhill, “ “	9 96
“ Springfield, “ “	4 50
“ Taunton, “ “	52 17

Amount carried forward, \$13,795 69

<i>Amount brought forward,</i>	\$13,795 69
Town of Canton, support of paupers,	103 34
Town of Dedham, support of paupers,	65 00
Town of Holliston, support of paupers,	156 00
Town of Peabody, support of paupers,	84 50
Town of Watertown, support of paupers,	5 25
C. J. Adams, support of sundry persons in the House of Correction,	49 14
Mrs. R. Keyes, board of foundling,	5 00
Mrs. Foley, care of pauper,	10 00
Margaret Callahan, board of paupers,	4 00
Bridget Crowley, board of paupers,	6 00
Mrs. W. Campbell, “ “	2 57
Abner Blaisdell, “ “	38 00
T. Garvin, “ “	45 00
L. M. Hatch, “ “	120 00
M. E. Nowlen, “ “	251 41
W. L. Oliver, “ “	78 00
Old Cambridge Baptist Church, board of paupers,	156 00
J. J. Giles, board of paupers,	6 00
Mrs. White, “ “	8 00
A. T. Clark, rent,	63 00
Patrick Clark, rent,	12 00
Mrs. Conley, “	20 00
Sally Bailey, “	42 00
E. F. Grant, “	64 50
M. Finnegan, “	32 00
Holbrook & Fox, rent,	84 00
B. Hagan, “	78 00
Patrick Kennedy, “	65 00
Margaret McCarty, rent,	112 00
<i>Amount carried forward,</i>	\$15,561 40

<i>Amount brought forward,</i>	\$15,561 40	
Mary McLaughlin, rent,	8 00	
M. J. McCarren, “	56 00	
N. Martin, “	4 00	
Hugh Gallagher, “	56 00	
J. Newhall, “	75 40	
M. E. Nowlen, “	65 00	
M. Terry, “	88 50	
Bernard O’Neil, “	27 00	
Charles O’Neil, “	14 50	
Horace Chapin, extra compensa- tion as secretary of Overseers of the Poor in 1878,	100 00	
Ansel Lewis, storekeeper,	300 00	
Overseer of the Poor,	300 00	
Nelson Howe, Overseer of the Poor,	300 00	
F. G. Williams, Overseer of the Poor,	300 00	
Thos. Cunningham, secretary of Overseers of the Poor,	200 00	
Vermont Asylum, board of Bridget Bradburn,	187 95	
	<hr/>	
	\$17,643 75	
EXCESS AND DEFICIENCY, balance to credit of account,	32 89	
	<hr/>	
		<u>\$17,676 64</u>

SUPPORT OF SOLDIERS AND SAILORS.

Credit.

STATE OF MASSACHUSETTS, SUPPORT OF SOLDIERS AND SAILORS, amount paid in 1879, charged to the State,	\$625 00
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Debit.

CASH paid sundry persons,	<u>\$625 00</u>
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STATE OF MASSACHUSETTS. — SUPPORT OF SOLDIERS AND SAILORS.

Credit.

CASH received of the State Treasurer, amount paid in 1878,	\$2,440 00
BALANCE to debit in account of 1880,	625 00
	<hr/>
	\$3,065 00

Debit.

BALANCE from 1878,	\$2,440 00
SUPPORT OF SOLDIERS, amount paid in 1879, as per account,	625 00
	<hr/>
	\$3,065 00
	<hr/> <hr/>

TAXES.

Credit.

CASH received, taxes for 1875,	\$269 30
1876,	50 78
1877,	49,335 14
1878,	86,950 50
1879,	235,342 13
	<hr/>
	\$367,332 35
REAL ESTATE LIENS, titles to the city for non-payment of taxes of 1877,	4,615 50
OVERLAY AND ABATEMENT, abatement on taxes for 1876,	\$143 78
1877,	4,233 09
1878,	3,534 30
1879,	3,506 40
	<hr/>
	11,417 57
BALANCE to debit in account of 1880, being uncollected taxes for 1877,	\$208 34
1878,	36,248 40
1879,	113,705 27
	<hr/>
	150,162 01
	<hr/>
	\$533,527 43

Debit.

BALANCE from 1878,	\$180,973 63	
APPROPRIATIONS, amount assessed for current expenses,	328,875 00	
STATE OF MASSACHUSETTS, amount as- sessed for State tax,	7,720 00	
COUNTY OF MIDDLESEX, amount as- sessed for county tax,	11,153 27	
OVERLAY AND ABATEMENT, amount added by the assessors,	4,805 53	
	<hr/>	\$533,527 43

TEMPORARY LOANS.

Credit.

BALANCE from 1878,		\$205,000 00
CASH borrowed by authority of the city council, on city notes, and of the following named: —		
April 1. — Warren Institution for Savings,	\$60,000 00	
April 29. — New England Trust Co.	50,000 00	
April 29. — State National Bank,	50,000 00	
April 29. — Blake Bros. & Co.	40,000 00	
April 30. — A. Sargent, trustee,	20,000 00	
April 30. — A. Sargent and E. E. Adams, trustees,	15,000 00	
July 14. — Blake Bros. & Co.	30,000 00	
Aug. 1. — Downer & Co.	60,000 00	
Aug. 29. — Brewster, Bassett & Co.	80,000 00	
Sept. 29. — J. T. Glines & Co.	10,000 00	
Sept. 29. — Downer & Co.	135,000 00	
Sept. 30. — A. Sargent, trustee,	20,000 00	
Sept. 30. — A. Sargent and E. E. Adams, trustees,	10,000 00	
Dec. 13. — A. Sargent, trustee, payable April 13, 1880,	20,000 00	
Dec. 13. — A. Sargent and E. E. Adams, trustees, payable April 13, 1880,	10,000 00	
Amounts carried forward,	<hr/> \$610,000 00	<hr/> \$205,000 00

<i>Amounts brought forward,</i>	\$610,000 00	\$205,000 00
Dec. 13. — J. T. Glines & Co. payable April 13, 1880,	10,000 00	
Dec. 13. — Boston Five Cents Sav- ings Bank, payable April 13, 1880,	150,000 00	
Dec. 31. — Boston Five Cents Sav- ings Bank, payable April 30, 1880,	20,000 00	
	<hr/>	790,000 00
		<hr/>
		\$995,000 00

Debit.

CASH paid the following named : —

April 30. — Provident Institution for Savings (borrowed of Blake Bros. & Co.), notes dated Dec. 30, 1878,	\$170,000 00
April 30. — A. Sargent, trustee, note dated Dec. 30, 1878,	20,000 00
April 30. — A. Sargent and E. E. Adams, trustees, note dated Dec. 30, 1878,	15,000 00
Aug. 2. — Warren Institution for Savings, note dated March 31, 1879,	60,000 00
Aug. 29. — New England Trust Co., note dated April 29, 1879,	25,000 00
Aug. 29. — State National Bank, note dated April 29, 1879,	25,000 00
Aug. 29. — Provident Institution for Savings (borrowed of Blake Bros. & Co), note dated April 29, 1879,	20,000 00
Sept. 29. — New England Trust Co., note dated April 29, 1879,	25,000 00
Sept. 29. — State National Bank, note dated April 29, 1879,	25,000 00
<i>Amount carried forward,</i>	<hr/> \$385,000 00

<i>Amount brought forward,</i>	\$385,000 00
Sept. 29. — Provident Institution for Savings (borrowed of Blake Bros. & Co.), note dated April 29, 1879,	20,000 00
Sept. 29. — A. Sargent, trustee, note dated April 29, 1879,	20,000 00
Sept. 29. — A. Sargent and E. E. Adams, trustees, note dated April 29, 1879,	15,000 00
Nov. 15. — New England Trust Co. (borrowed of Downer & Co.), notes dated Sept. 29, 1879,	50,000 00
Nov. 15. — Provident Institution for Savings (borrowed of Downer & Co.), notes dated Sept. 29, 1879,	60,000 00
Nov. 15. — Warren Institution for Savings (borrowed of Downer & Co.), note dated Sept. 29, 1879,	25,000 00
Nov. 17. — Merchants' National Bank (borrowed of Blake Bros. & Co.), notes dated July 14, 1879,	30,000 00
Dec. 13. — A. Sargent, trustee, note dated Sept. 30, 1879,	20,000 00
Dec. 13. — A. Sargent and E. E. Adams, trustees, note dated Sept. 30, 1879,	10,000 00
Dec. 13. — J. T. Glines & Co., note dated Sept. 29, 1879,	10,000 00
Dec. 17. — Through Nat'l Secu- rity Bank (borrowed of Downer & Co.), notes dated Aug. 1, 1879,	60,000 00
Dec. 17. — Through Nat'l Secu- rity Bank (borrowed of Brews- ter, Bassett & Co.), notes dated Aug. 29, 1879,	80,000 00
<i>Amount carried forward,</i>	<hr/> \$785,000 00

Amount brought forward, \$785,000 00

Credit.

BALANCE, to credit in account of 1880, \$210,000 00

\$995,000 00

WATER MAINTENANCE.

Credit.

APPROPRIATIONS, amount assessed, \$13,000 00

CASH received of city of Boston, re-
turn on water rates:—

1878. 40 per cent on \$2,365.50,	\$946 20
1879. 15 per cent on \$20,000,	3,000 00
20 per cent on \$10,000,	2,000 00,
25 per cent on \$10,000,	2,500 00
30 per cent on \$10,000,	3,000 00
40 per cent on \$2,238.50	895 40

\$12,341 60

Fire Department account, repairs
on hydrants, etc.

183 02

Sewers account, pipe, etc.

145 81

J. V. Fletcher, repairs on hydrant,

4 85

Richard Falvey, repairs on pipe,

7 00

John Peabody, manure,

6 00

12,688 28

EXCESS AND DEFICIENCY, transferred,

2,000 00

\$27,688 28

Debit.

CASH paid interest on Water Loan
Bonds,

\$205,000 at 6½ per cent, \$13,325 00

\$20,000 at 6 per cent, 1,200 00

\$70,000 at 5½ per cent, 3,850 00

40,000 at 5 per cent, 2,000 00

Amount carried forward, \$20,375 00

<i>Amount brought forward,</i>	\$20,375 00
CASH paid laborers,	3,424 08
N. Dennett, salary as superintendent,	1,200 00
E. S. Conant, salary as clerk of Water Board,	100 00
Walworth Manufacturing Co., fittings,	339 44
F. B. Austin & Co., iron,	171 58
H. Wellington & Co., cement,	267 17
W. M. Hadley, " carrying water,	10 00
Frank Shute & Co., tools, etc.	10 34
A. J. Wilkinson & Co. " "	5 97
Boston Machine Co., valves, etc.	23 00
E. B. Stoddard, files, etc.	4 18
Otis D. Dana, " "	12 86
Hamblen & Mathews, fittings,	7 00
Boston Lead Co., lead,	7 75
Burditt & Williams, locks, .	6 00
Mt. Hope Iron Co., nails,	4 75
Highland Foundry Co., furnace, etc.	38 33
S. May & Co., lanterns,	10 25
C. Holmes & Son, hardware, etc.	14 70
H. W. Raymond, " "	31 96
Margaret Pepper, sand,	40 50
Boston Belting Co., rubber rings,	2 15
C. W. Badger, lead, etc.	6 25
Sewell, Day & Co., rope,	21 55
T. P. Barnes & Son, powder, etc.	3 00
J. H. Brooks, duck,	7 39
J. Boyd & Son, leather,	10 00
Watson & Bisbee, jacket, etc.	4 50
J. J. & M. F. Fenelon, drugs,	1 75
Geo. H. Cowdin, drugs,	1 25
Sherburne & Co., cotton waste,	2 00
Mark Leighton, carpenter work,	1 57
J. C. Storey & Co., oil, etc.	8 76
J. F. Towle, oil, etc.	1 43

Amount carried forward, \$26,186 46

<i>Amount brought forward,</i>	\$26,186 46
C. B. Knowles, oil, etc.	1 33
Knowles Bros., oil meal,	68
J. F. Cole & Co., “	30
J. H. Hanley, charcoal,	34 65
H. A. Hall, rubber mittens,	6 00
Ames Plow Co., shovels,	21 20
Philip Eberle, boots,	16 65
A. Hale & Co., “	4 00
G. M. Winslow & Co., coal,	12 00
J. Peck & Sons, salt,	2 10
J. Boyd & Sons, blankets,	7 00
Knapp & Ferrin, blanket, etc.	5 00
Moses Coleman & Son, blanket,	8 00
J. G. Knapp & Co., horse cover, etc.	6 50
J. A. Pearson, harness,	50 00
N. L. Pennock, harness work,	7 00
T. B. Wilson, “ “	28 62
valves, etc.	16 82
Caleb Kingman, oak log,	3 50
Seward Dodge, blacksmithing,	86 50
Chas Maguire, horseshoeing,	12 59
E. O'Brien, “	1 75
J. N. White, harness work,	14 32
J. C. Warren, teaming,	8 50
G. W. Pritchard, teaming, etc.	37 60
J. Leland, repairing wagon,	3 00
Conant & Sanborn, soap,	4 40
Cambridge Gas Light Co., gas,	17 17
City of Boston, water rate,	20 00
Union Glass Co., lanterns, etc.	14 83
Samuel Cooper & Bro., horse in exchange,	150 00
J. Q. Twombly, painting and glaz- ing	25 68
John Clary, lumber,	67 94
E. D. Sawyer & Co., lumber,	9 14
J. F. Ayer, “	14 28

Amount carried forward, \$26,905 51

<i>Amount brought forward,</i>	\$26,905 51	
Hooper, Lewis & Co., stationery,	15 15	
Greenough & Co., directory,	2 00	
J. O. Hayden & Co., printing,	2 00	
Hudson & Gage, painting wagon,	12 00	
Geo. O. Murch, hay and straw,	40 49	
N. Tufts & Son, grain,	44 68	
Hewey, Skillins & Co., grain,	26 28	
Powers, Melvin & Co., “	99 00	
Boston Steamed Grain Mill, grain,	42 80	
J. H. Brine, hay,	20 70	
fuel,	19 40	
American Spiced Food Co., food,	4 25	
W. J. London, expressing,	75	
E. R. Perham, “	25	
B. F. Chase, damage by water,	100 00	
John O'Donnell, “ “	25 00	
J. G. Gallishaw, “ “	15 00	
Sabin & Page, brush,	1 25	
	<hr/>	
	\$27,376 51	
WATER SERVICES, transferred,	145 02	
EXCESS AND DEFICIENCY, balance to		
credit of account,	166 75	
	<hr/>	
	\$27,688 28	

WATER SERVICES.

Credit.

CASH received of Miscellaneous	
(Watering Streets) account, re-	
pairing standpipe,	\$44 00
School-house Repairs account,	
pipe,	150 03
J. P. Nichols, pipe,	7 60
C. A. Legallee, “	9 85
John Crimmins, “	3 25
Heirs John McKenna, pipe,	6 62
Geo. McLaughlin, “	5 07
L. C. Butterfield, “	12 85
	<hr/>
<i>Amount carried forward,</i>	\$239 27

<i>Amount brought forward,</i>	\$239 27	
F. A. Titus, extension of service pipe,	10 00	
J. H. Stevens & Co., return on bill paid,	35	
	<hr/>	\$250 02
WATER SERVICE ASSESSMENTS, cost of service pipes laid,		1,629 58
WATER MAINTENANCE, cost of services over sums charged, transferred,		145 02
		<hr/>
		\$2,024 62

Debit.

CASH paid laborers,	\$576 73	
Walworth Manuf. Co., fittings,	410 00	
Ward, Curley & Co., “	375 93	
Stultz & Co., “	12 85	
Joseph Zane & Co., “	2 12	
J. H. Stevens & Co., “	2 91	
Fuller, Dana & Fitz, “	90	
Geo. Woodman & Co., pipe, etc.	354 89	
Chadwick Lead Works, “	64 16	
Levi Hawkes & Co., “	7 80	
Howe & Flint, “	3 86	
Braman, Dow & Co., “	151 00	
Boston Lead Co., tin,	3 18	
Hugh Finnegan, soldering irons,	8 00	
F. B. Austin & Co., solder,	6 60	
Boston Belting Co., washers,	7 31	
Charles Holmes & Son, hardware,	1 68	
A. J. Wilkinson & Co., “	1 60	
Frank Shute & Co., wrenches,	1 08	
S. Dodge, blacksmithing,	15 36	
Chas. Maguire, horseshoeing,	7 01	
E. O'Brien, “	1 75	
J. H. Cummings & Co., printing,	6 15	
Thorpe's Express, expressing,	1 75	
	<hr/>	\$2,024 62
		<hr/>

WATER SERVICE ASSESSMENTS.

Credit.

CASH received of sundry persons for water services,	\$1,910 62
BALANCE to debit in account of 1880,	296 52
	<hr/>
	\$2,207 14

Debit.

BALANCE from 1878,	\$577 56
WATER SERVICES, service pipes laid in 1879,	1,629 58
	<hr/>
	\$2,207 14
	<hr/>

Table D.

BALANCES DECEMBER 31, 1879.

Cash,	\$5,757 07	
Excess and Deficiency,	21,197 82	
Funded Debt,		\$1,585,000 00.
Highway Betterment Assessments,	5,480 55	
Property and Debt Balance,	463,600 00	
Public Library,		38 64
Public Park,		31,611 11
Public Park Betterment Assessments,	29,067 84	
Public Property,	1,121,400 00	
Real Estate Liens,	18,822 21	
Sewers (Beacon and Elm Streets Sewer),		6,413 52
Sewer Assessments,	11,252 94	
Sidewalk Assessments,	2,039 67	
State of Massachusetts, — Indigent Soldiers and Sailors,	302 50	
State of Massachusetts, — State Aid,	4,303 00	
State of Massachusetts, — Support of Soldiers and Sailors,	625 00	
Sundry Persons,		1,243 86
Taxes,	150,162 01	
Temporary Loans,		210,000 00
Water Service Assessments,	296 52	
	<u>\$1,834,307 13</u>	<u>\$1,834,307 13</u>

REPORT

OF

COMMISSIONERS OF THE SINKING FUNDS.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Jan. 20, 1880.

Report accepted and referred to the Committee on Printing, with instructions to print the same in the Annual Report of 1879, and sent down for concurrence.

CHARLES E. GILMAN, *Clerk*.

IN COMMON COUNCIL.

Concurred in.

DOUGLAS FRAZAR, *Clerk*.

CITY OF SOMERVILLE.

IN BOARD OF COMMISSIONERS OF THE SINKING FUNDS,
January 20, 1880.

To the Honorable the Mayor and the City Council of the City of Somerville :

GENTLEMEN, — The undersigned present herewith their fourth annual report as Commissioners of the Sinking Funds of this city. The contributions by the city to this date, raised by

taxation, amount to	\$182,566 86
The accumulations thereto, being interest on investments and on deposits in banks, amount to	15,458 74
A total of	<u>\$198,025 60</u>

The funded debt of the city, for the extinguishment of which sinking funds have been established as required by law, is \$1,585,000, as follows : —

City Loan	\$60,000 00,	must be extinguished in 1885.
City Loan	1,155,000 00,	must be extinguished in 1895.
Sewer Loan	35,000 00,	must be extinguished in 1896.
Water Loan	315,000 00,	must be extinguished in 1905.
Water Loan	10,000 00,	must be extinguished in 1906.
Water Loan	10,000 00,	must be extinguished in 1907.

\$1,585,000 00

The sinking funds at this date for the redemption of the debt are : —

For City Loan, maturity of 1885,	\$21,001 00
City Loan, maturity of 1895,	152,373 60
Sewer Loan, maturity of 1896,	3,695 00
Water Loan, maturity of 1905,	20,177 00
Water Loan, maturity of 1906,	472 00
Water Loan, maturity of 1907,	307 00
Total sinking funds,	<u><u>\$198,025 60</u></u>

Invested as follows : —

In bonds of the City of Somerville,	\$196,000 00
Deposits in banks drawing interest,	2,025 60

Respectfully submitted,

NATHAN TUFTS,	} <i>Commissioners.</i>
HENRY F. WOODS,	
JOHN A. HUGHES,	

ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

OF THE

CITY OF SOMERVILLE,

FOR THE

YEAR 1879.

CITY OF SOMERVILLE.

IN SCHOOL COMMITTEE, Dec. 27, 1879.

The Superintendent submitted his Annual Report, which was read and unanimously accepted.

It was voted that the committee adopt the report now submitted by the Superintendent of the Public Schools, and present it to their fellow-citizens as the Report of the School Committee for the year 1879.

J. H. DAVIS, *Secretary.*

IN BOARD OF MAYOR AND ALDERMEN, Jan. 20, 1880.

Received and referred to the Committee on Printing with instructions to print the same in the Annual Report of 1879. Sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, Jan. 20, 1880.

Concurred.

DOUGLAS FRAZAR, *Clerk.*

SCHOOL COMMITTEE FOR 1879.

HON. GEORGE A. BRUCE, Mayor, *ex officio*.

EDWARD GLINES, President of Common Council, *ex officio*.

WARD ONE.

HENRY M. MOORE	Term expires Dec. 31, 1879.
SANFORD HANSCOM, M. D.	" " 1880.
JOHN H. BUTLER	" " 1881.

WARD TWO.

ALPHONZO H. CARVILL, M. D.	Term expires Dec. 31, 1879.
CHAS. S. LINCOLN	" " 1880.
OREN S. KNAPP	" " 1881.

WARD THREE.

JOSEPH P. WILLIAMS	Term expires Dec. 31, 1879.
HON. SELWYN Z. BOWMAN	" " 1880.
HENRY F. WOODS	" " 1881.

WARD FOUR.

PROF. BENJ. G. BROWN	Term expires Dec. 31, 1879.
REV. CHAS. M. SMITH, D. D.	" " 1880.
HENRY C. BUCK	" " 1881.

Chairman.

HON. GEORGE A. BRUCE.

Secretary and Superintendent.

JOSHUA H. DAVIS.

SUBCOMMITTEES.

On the High School	Messrs.	LINCOLN, BUTLER, BOWMAN, SMITH, BROWN.
On Schools in E. Somerville Dist. . .	"	MOORE, HANSCOM, BUTLER.
On Schools in Prospect Hill Dist. . .	"	KNAPP, LINCOLN, CARVILL.
On Schools in Winter Hill Dist. . .	"	WOODS, WILLIAMS, BOWMAN, GLINES.
On Schools in Spring Hill Dist. . .	"	SMITH, BROWN, BUCK.
On Schools in West Somerville Dist. .	"	BROWN, BUCK, SMITH.
On Evening Schools	"	WILLIAMS, CARVILL, BUCK.
On Examination of Teachers	"	BUTLER, KNAPP, LINCOLN.
On Text-Books	"	HANSCOM, LINCOLN, BOWMAN.
On Repairs, Furniture, Heating Ap- paratus	"	MOORE, GLINES, WILLIAMS, BUCK, CARVILL.
On School Supplies	"	WOODS, HANSCOM.
On Fuel	"	WILLIAMS, BUCK.
On Music	"	HANSCOM, LINCOLN, SMITH, BOWMAN.
On Finance	"	BUTLER, WOODS.
On Drawing and Penmanship . . .	"	BOWMAN, WOODS, SMITH, CARVILL.
On Salaries	"	KNAPP, HANSCOM, SMITH, WOODS, LINCOLN.
On Examination of First Class . . .	"	HANSCOM, WOODS.
On Examination of Second Class . .	"	SMITH, KNAPP.
On Examination of Third Class . . .	"	LINCOLN, BUTLER.
On Examination of Fourth Class . .	"	BROWN, MOORE.
On Examination of Fifth Class . . .	"	BOWMAN, CARVILL.
On Examination of Sixth Class . . .	"	WILLIAMS, GLINES, BUCK.

SCHOOL COMMITTEE FOR 1880.

HON. GEORGE A. BRUCE, Mayor, *ex officio*.

JAMES W. BAILEY, President of Common Council, *ex officio*.

WARD ONE.

SANFORD HANSCOM, M. D.	Term expires Dec. 31, 1880.
JOHN H. BUTLER	" " 1881.
HENRY M. MOORE	" " 1882.

WARD TWO.

CHARLES S. LINCOLN	Term expires Dec. 31, 1880.
OREN S. KNAPP	" " 1881.
ALPHONZO H. CARVILL, M. D.	" " 1882.

WARD THREE.

QUINCY E. DICKERMAN	Term expires Dec. 31, 1880.
HENRY F. WOODS	" " 1881.
NORMAN W. BINGHAM	" " 1882.

WARD FOUR.

REV. CHARLES M. SMITH, D. D.	Term expires Dec. 31, 1880.
HENRY C. BUCK	" " 1881.
PROF. BENJAMIN G. BROWN	" " 1882.

Chairman.

HON. GEORGE A. BRUCE.

Superintendent and Secretary.

JOSHUA H. DAVIS.

SUBCOMMITTEES.

On the High School	Messrs. LINCOLN, BUTLER, WOODS, SMITH, BROWN, BINGHAM.
On Schools in East Somerville Dist.	" MOORE, HANSCOM, BUTLER.
On Schools in Prospect Hill Dist.	" KNAPP, LINCOLN, CARVILL.
On Schools in Winter Hill Dist.	" WOODS, BINGHAM, DICKER- MAN.
On Schools in Spring Hill Dist.	" SMITH, BROWN, BUCK.
On Schools in West Somerville Dist.	" BROWN, BUCK, BAILEY.
On Evening Schools	" CARVILL, BUCK, BAILEY.
On Examination of Teachers	" LINCOLN, KNAPP, BUTLER.
On Text-Books	" HANSCOM, LINCOLN, BROWN, DICKERMAN.
On Repairs, Furniture, Heating Ap- paratus	" MOORE, CARVILL, BAILEY, BINGHAM.
On School Supplies	" WOODS, HANSCOM.
On Fuel	" BUCK, BINGHAM.
On Music	" HANSCOM, LINCOLN, SMITH, BINGHAM.
On Finance	" KNAPP, MOORE.
On Drawing and Penmanship	" DICKERMAN, WOODS, KNAPP, CARVILL.
On Salaries	" KNAPP, HANSCOM, SMITH, WOODS, LINCOLN, BUCK.
On Examination of First Class	" KNAPP, WOODS.
On Examination of Second Class	" SMITH, HANSCOM.
On Examination of Third Class	" LINCOLN, BUTLER.
On Examination of Fourth Class	" BROWN, MOORE.
On Examination of Fifth Class	" CARVILL, BINGHAM.
On Examination of Sixth Class	" BUCK, BAILEY, DICKERMAN.

SUPERINTENDENT'S REPORT.

To the School Committee of Somerville :

GENTLEMEN, — In compliance with the requirements of your rules, the following report of the public schools of the city for the year 1879 is respectfully submitted.

CHANGE IN THE SCHOOL BOARD.—The resignation of Hon. Selwyn Z. Bowman, a member of the School Committee for Ward Three, was received and accepted April 26th. The vacancy thus occasioned was filled May 12th, in convention of the City Council and the School Board, by the election of Walter S. Barnes, Esq. Subsequently, Mr. Barnes was appointed to fill the vacancies in the several standing committees caused by the resignation of Mr. Bowman.

SCHOOL BUILDINGS.—All needful repairs and improvements of the school buildings have received the careful attention of the Committee on Public Property. During the summer vacation, the Franklin School-house was raised sufficiently to admit of a basement story, and its fences and outbuildings, which were in a dilapidated condition, were thoroughly repaired. Defects in the ceiling of several rooms in the Foster School-house rendered important and unexpected repairs in that building necessary. The walls and ceilings in many of the school buildings in various parts of the city have been renovated, shade trees have been planted, and many other improvements have been effected.

Number of school-houses	18
“ school-rooms owned by the city	80
“ rooms hired for school purposes	6
“ vacant school-rooms	1
“ school-halls not occupied by schools . . .	2
“ school-rooms in the High School-house . .	2
“ recitation-rooms “ “	5
“ school buildings heated by steam	3
“ “ “ furnaces	5
“ school-rooms heated by stoves	32

ADDITIONAL ACCOMMODATIONS. — Measures are in contemplation for the removal of the Lincoln School-house to Clarendon Hill, and for the erection of a Grammar School building of eight rooms, in the centre of West Somerville district.

If all needful arrangements can be perfected during the present winter, so that the work of constructing the new building can be entered upon at the first opening of spring, and the basement for the Lincoln School-house can be in readiness to receive that building at the beginning of the summer vacation, both buildings may be completed and ready for use at the commencement of the school year in September, and the schools will experience no interruption.

All the schools are well filled, and several Primary Schools, in different parts of the city, are crowded. One school-room only is vacant. The favorable location of our city, and its numerous means of easy and rapid communication with Boston, render it a desirable place of residence. We may, therefore, reasonably anticipate a gradual increase of population and a demand for a corresponding increase of school accommodations.

Next to West Somerville, the section of the city in greatest need of convenient school accommodations is that situated south of the Fitchburg Railroad and between Prospect and Park Streets. That section of the city contains a population of about 1,900, including 380 scholars in the public schools. There are only two school-rooms south of the railroad, and those furnish insufficient accommodations for the children of the second and third classes of the Primary Schools. Scholars belonging to the Grammar Schools and the first class of the Primary Schools are assigned to various buildings in Prospect Hill and Spring Hill districts. Those buildings are situated far from the homes of many of the scholars, and some of them can be approached only by crossing the track of the Fitchburg Railroad.

A suitable building located near the centre of that section of the city, for the use of scholars belonging to classes below the third class of the Grammar Schools, and for such scholars of the Primary Schools as are not already provided for, would add greatly to the convenience of those scholars, and would relieve the crowded rooms in the Luther V. Bell and Prospect Hill school buildings.

TEACHERS. — The following-named teachers have been elected within the year: —

Frank M. Hawes, Esq., submaster of the High School.
 Frederick Farnsworth, Esq., assistant in the High School.
 Robert Bickford, Esq., principal of the Luther V. Beil School.
 Miss Anna C. Damon, teacher in the Prospect Hill School.
 Miss Harriet H. Weld, teacher in the Morse School.
 Miss Leila V. Colby, teacher in the Foster School.
 Miss Carrie M. Sibley, teacher in the Spring Hill School.
 Miss Maud M. Hobson, teacher in the Jackson School.
 Miss Annie F. Hills, teacher in the Lincoln School.
 Miss Mary A. Paul, teacher in the Holland Street School.

Whole number of teachers	. . . . .	92
Male teachers, 9 ; female teachers, 83.		
Number of teachers in the High School	. . . . .	6
Male teachers, 3 ; female teachers, 3.		
Number of teachers in the Grammar Schools	. . . . .	51
Male teachers, 5 ; female teachers, 46.		
Number of teachers in the Primary Schools	. . . . .	35
One teacher of Vocal Music.		

MISS LIZZIE C. HOWE, a teacher in the Franklin School, died on the twenty-eighth day of November, after a brief but severe sickness.

Miss Howe graduated at our High School in 1868, and was elected teacher of the Webster School in the autumn of the same year. In 1870, she was transferred to the Franklin School, and retained her connection with that school until the time of her death. She was a faithful, conscientious, and competent teacher, was highly esteemed by the School Committee, and greatly beloved by her pupils and associate teachers.

SCHOOLS AND TEACHERS.

SCHOOLS.	TEACHERS.	SALARIES.	FIRST ELECTED.
High	George L. Baxter	\$2,200	1867
"	Frank M. Hawes	1,400	1879
"	Frederick Farnsworth	1,050	1879
"	Sarah W. Fox	1,050	1868
"	Sarah L. Graves	850	1865
"	Annette E. Long	850	1864
Forster	John S. Hayes	1,650	1878
"	Stella M. King	625	1877
"	Mary E. Northrup	600	1878
"	Frances M. Guptill	600	1869
"	Alice A. Batchelor	575	1877
"	Nellie M. Whitney	575	1878
"	Martha H. Pennock	550	1873
"	Leila V. Colby	300	1879
"	Lizzie G. Perry	550	1878
Prescott	Gordon A. Southworth	1,900	1873
"	Anna M. Bates	675	1874
"	V. E. Hapgood	600	1876
"	Adelaide Reed	650	1864
"	Frank P. Hudson	600	1877
"	Abbie A. Anderson	600	1878
"	Amelia I. Sears	600	1873
"	Nancy W. Proctor	575	1869
"	Catharine T. Brown	575	1868
"	Clara Taylor	575	1871
"	Sarah E. Pratt	575	1877
"	Elgina M. Plummer	550	1877
"	M. Annie Rice	575	1873
Edgerly	Augusta A. Cowles	625	1865
"	Harriet N. Sands	575	1864
"	Anna L. Prescott	550	1873
"	Clara M. Bagley	550	1873
Tufts Street	H. V. Hathaway	575	1875
"	Ada Cowles	550	1875
Luther V. Bell	Robert Bickford	1,700	1879
"	Minnie H. Marden	625	1876
"	Clara A. Battles	600	1874
"	Lydia L. Gordon	600	1869
"	Ellen M. Gooding	600	1868
"	Caroline S. Plimpton	600	1859
"	Abbie C. Hunt	600	1873
"	Fannie A. Wilder	600	1874
"	Anna M. Snow	575	1866
"	Lydia J. Page	575	1869
"	Lizzie F. Appleton	550	1874
"	Augusta M. Houghton	550	1877
"	May E. Berry	300	

SCHOOLS AND TEACHERS. — *Continued.*

SCHOOLS.	TEACHERS.	SALARIES.	FIRST ELECTED.
Prospect Hill . . .	Augusta A. Roberts . . .	\$650	1861
“ . . .	Maria Miller . . .	575	1870
“ . . .	Anna C. Damon . . .	500	1879
“ . . .	Ellen Ledyard . . .	575	1874
“ . . .	Ida A. Howe . . .	550	1875
“ . . .	Lillian F. Howe . . .	550	1876
“ . . .	Charlotte I. Houghton . .	550	1875
Brastow . . .	Sarah E. Pennock . . .	575	1871
“ . . .	Lizzie D. Harding . . .	425	1877
Bennett . . .	Helen Tincker . . .	625	1872
“ . . .	Adeline Sanderson . . .	550	1871
“ . . .	Mary B. Carrier . . .	550	1873
“ . . .	Emma F. Schuh . . .	550	1874
Jackson . . .	Lizzie W. Shelton . . .	625	1860
“ . . .	Rebecca F. Woodberry . .	550	1863
“ . . .	Mary L. Sanderson . . .	550	1875
“ . . .	Louise A. Brine . . .	500	1876
Webster . . .	Ada L. Sanborn . . .	625	1869
“ . . .	Nora O'Leary . . .	550	1874
“ . . .	Annie L. Savage . . .	550	1873
Union . . .	Isabella M. Prince . . .	550	1876
Morse . . .	Charles C. Hunkins . . .	1,600	1877
“ . . .	Nellie P. Nichols . . .	600	1871
“ . . .	Pauline S. Downes . . .	600	1872
“ . . .	Harriet H. Weld . . .	600	1871
“ . . .	Anna E. Sawyer . . .	575	1873
“ . . .	Louisa M. Wilde . . .	550	1873
Beech Street . . .	Mary A. Haley . . .	575	1868
“ . . .	Helen W. Chapin . . .	550	1873
Spring Hill . . .	Carrie M. Sibley . . .	350	1879
Franklin . . .	Jane E. Clark . . .	650	1873
“ . . .	Emeline C. Ruggles . . .	550	1876
“ . . .	Hattie A. Hill . . .	550	1874
“ . . .	Catharine M. Shannon . .	300	
Harvard . . .	Annie E. Robinson . . .	550	1876
Lincoln . . .	George E. Nichols . . .	1,500	1877
“ . . .	Jennie Colburn . . .	600	1875
“ . . .	Georgiana Cutter . . .	600	1873
“ . . .	Lizzie J. Conwell . . .	575	1873
“ . . .	Annie F. Hills . . .	575	1877
Wallace Street . .	Carrie L. Lacount . . .	550	1875
“ . . .	Sarah E. Pray . . .	425	1878
Holland Street . .	Mary A. Paul . . .	550	1879
Cedar Street . . .	Alice Simpson . . .	575	1872
“ . . .	Alice M. Porter . . .	300	
Teacher of Music . .	S. H. O. Hadley . . .	1,000	1868

PRIMARY SCHOOLS. — There has been no increase in the number of schools of this grade during the year, but the average attendance of pupils has been 89 more than last year.

Whole number of Primary Schools	35
Average whole number of pupils for the year	1,785.7
Average attendance	1,636.7
Per cent of attendance	91.6
Number in attendance at the present time	2,026 0

In September, Appleton's First and Second Readers were added to the reading books previously in use. The use of spelling books was discontinued. For practice in writing, ruled slates and paper were substituted for copy books.

Prominent among the various methods employed in teaching children to read, are the phonic method, the word method, and the sentence method; each of which has zealous advocates, and is very generally adopted. All methods soon converge to the same point, and all teachers who follow them pursue, in their subsequent practice, substantially the same course. If, therefore, any one of the systems specified is to be followed exclusively, preference would be given to that one which the teacher, who is to use it, regards with the most favor and would pursue with the greatest earnestness and enthusiasm. Our teachers, in their practice, combine the three methods, and secure gratifying results. They follow, substantially, the course indicated by Monroe's Charts and Appleton's First Reader, with which they are furnished. The course pursued is essentially as follows: Objects or their pictures are presented to the pupils, in the first lessons in reading, in connection with their printed names, that the two may be associated in their minds. When a sufficient number of words have been learned in this manner, they are arranged to form sentences which are read at sight. As soon as practicable, the words already learned are resolved into their elementary sounds. Children very soon acquire facility in the analysis of familiar words, for they readily perceive that the phonic analysis of a word is simply a prolonged pronunciation of it. This analytic process is soon followed by the synthetic or word-building process, and practice is given in the formation of words from their elementary sounds. In due time, familiar words are spelled by using the names of their letters.

Thus, under skilful management, apt scholars, in a few weeks, acquire the ability to read at sight all the sentences upon the

charts, to analyze phonetically the words composing them, and to spell the words in the usual way, naming their letters ; and are prepared, with little aid from their teacher, to read the easy lessons in the First Reader. The exercises in reading, by means of which this ability is secured, are so conducted that they become pleasant pastimes to the children.

The Primary Schools are well supplied with standard reading books ; but the scholars soon become familiar with all the lessons they contain, and their interest in them declines. A great advantage would be secured if the first and second classes could be furnished frequently with fresh reading, by the introduction of some serial like the Nursery. The expense that would accrue would be comparatively small, since by exchanges the same series of publications could be used by several schools.

The discontinuance of the use of spelling books in these schools is not on account of any hostility to this class of text-books, but rather in consequence of the lack of adaptation to schools of this grade of the books now in use. To acquire the ability to spell correctly all the 'words of our language which we have occasion to use, is an arduous task. Hence we need to avail ourselves of all means at our disposal to aid in the accomplishment of our purpose. At present our pupils spell the words contained in their reading books, and lists of words prepared by their teachers. They are required also to copy paragraphs from their readers, to write sentences from dictation and sentences of their own composing. A spelling book which would contain some four or five hundred words that are within the scope of the understanding of scholars of the Primary Schools, for drill exercises in spelling, would be a valuable addition to the agencies now employed.

As soon as the children are familiar with the Roman letters, small and large, script letters are introduced, and in a very brief period they learn to read written words and printed words with equal facility. To aid beginners in gaining an idea of numbers and their combinations, blocks and other expedients are employed. Teachers are furnished with blank cards, upon which they place pictures and brief reading lessons that suggest thoughts to their pupils, which they are encouraged to express in suitable language. Various other means are employed to awaken thought and to encourage expression.

Of many of these schools we can speak in decided terms of approval. Their teachers are in full sympathy with their work,

are vigilant in seeking the best methods of teaching, and earnest and judicious in their application of them.

EXHIBIT OF ALL THE PRIMARY SCHOOLS.

SCHOOLS.	TEACHERS.	Average whole number.	Average attendance.	Per cent of attendance.	Number of tardinesses.	Number of dismissals.
Forster	M. H. Pennock . .	49.8	46.8	93.9	8	14
"	Leila V. Colby . . .	54.8	51.6	94.1	8	8
"	L. G. Perry	52.4	47.2	90.1	13	14
Prescott	S. E. Pratt	52.0	49.8	95.7	7	30
"	E. M. Plummer . . .	62.9	58.1	92.5	9	46
"	M. A. Rice	66.1	60.1	90.9	17	32
Edgerly	A. L. Prescott . . .	52.8	50.3	95.2	78	15
"	C. M. Bagley	57.7	53.2	92.2	94	31
Tufts Street . .	H. V. Hathaway . .	48.5	45.1	94.2	74	57
"	Ada Cowles	52.4	45.7	87.2	85	7
L. V. Bell . . .	L. F. Appleton . . .	54.9	50.1	91.2	47	40
"	A. M. Houghton . . .	62.6	54.9	87.7	54	25
Prospect Hill .	I. A. Howe	50.2	47.1	93.8	32	40
"	L. F. Howe	46.9	43.4	92.5	24	31
"	C. I. Houghton . . .	53.8	48.3	89.6	51	23
Brastow	L. D. Harding	47.3	43.9	92.8	29	8
Bennett	A. Sanderson	40.8	37.8	92.6	34	7
"	M. B. Carrier	43.6	40.6	93.1	30	3
"	E. F. Schuh	54.5	49.9	91.5	36	16
Jackson	R. F. Woodbury . . .	44.8	42.4	94.6	81	32
"	M. L. Sanderson . . .	54.8	49.7	90.9	57	1
"	L. A. Brine	47.8	43.4	90.8	61	2
Webster	N. O'Leary	45.6	43.2	94.7	108	18
"	A. L. Savage	52.4	48.8	93.1	88	10
Union	I. M. Prince	57.8	50.8	88.0	33	13
Morse	L. M. Wilde	54.2	49.7	91.7	21	24
Beech Street . .	H. W. Chapin	50.3	46.3	92.1	69	71
Spring Hill . .	C. M. Sibley	53.2	46.3	87.0	166	143
Franklin	E. C. Ruggles	46.6	43.5	93.3	34	1
"	H. A. Hills	45.0	43.3	95.1	53	4
Harvard	A. E. Robinson	55.4	49.9	91.9	84	26
Wallace Street .	C. L. Lacount	53.2	51.2	96.2	53	43
"	S. E. Pray	40.6	36.4	89.6	37	38
Holland Street .	M. A. Paul	36.0	32.4	90.0	93	30
Cedar Street . .	A. M. Porter	44.0	35.5	80.7	370	102
		1785.7	1636.7	91.6	2,138	1,005

GRAMMAR SCHOOLS. — Two Grammar Schools have been organized within the year; one in Prospect Hill district and one in West Somerville district. For the accommodation of the new school in Prospect Hill district, and the school which was organized in that district in 1878, the hall in the Luther V. Bell School-house was converted into two school-rooms. In West Somerville district, the first floor and basement of the building located on the corner of Holland and Wallace Streets, were hired, and prepared for the accommodation of the two Primary Schools that had occupied rooms in Clarendon Block previous to the summer vacation. The new school which was organized in September occupies a room in Clarendon Block, vacated by one of the Primary Schools.

At the beginning of the school year, Barnes's Brief History of the United States was introduced as a text-book, and Anderson's Popular History of the United States for reference and supplementary reading. In the first, fourth, and sixth classes, Appleton's Readers were substituted for the reading books formerly used by those classes.

At the close of the summer term one hundred and thirty-three pupils graduated from the Grammar Schools as follows: —

From the Luther V. Bell School	39
“ Prescott School	38
“ Morse School	24
“ Forster School	16
“ Lincoln School	16

Of the graduates, one hundred and two applied for admission to the High School, ninety-eight passed the required examination, and eighty-five entered the school in September.

Whole number of Grammar Schools	48
Average whole number of pupils for the year	2,155.5
Average attendance for the year	2,045.8
Per cent of attendance for the year	94.8
Whole number in attendance at the present time	2,250

No material changes have been effected during the year in the course of study pursued in the Grammar Schools; but special and increased efforts have been made to encourage practice in the use of language, spoken and written. Exercises in sentence-making and easy composition, commenced in the Primary Schools, are continued in the lower classes of the Grammar Schools. In the

upper classes, letter-writing, the writing of business forms, abstracts of daily lessons, and brief essays form a part of the work of each week. In these exercises special attention is given to the proper arrangement and appropriate expression of ideas, the correct use of capitals and punctuation marks, to the penmanship and general style in the mechanical execution of what is written.

For a series of years the Grammar Schools have been under good management, and have accomplished thorough and substantial work. It is high commendation of them to say that they are not only maintaining their former high relative standing, but are making important advances. Less time than formerly is devoted to mere memorizing and text-book recital. Unimportant details are omitted or but incidentally considered, and increased attention is given to the more important points of the studies pursued, especially those which are the bases of subsequent studies. Our aim is more thorough and earnest teaching, more intelligent study by the pupils, and a clearer comprehension of the subjects pursued.

Only a few changes have occurred in the teaching force in this department during the year. All the teachers are performing their work faithfully and well.

Each succeeding year exhibits marked improvement in all the important elements of good schools. A higher standard of scholarship is secured; pleasant relations are maintained between teachers and pupils in each department; better order is preserved, and with fewer cases of punishment. Five Grammar Schools and two Primary Schools report no case of punishment during the year; one school reports one case only; one, two cases; one, three cases; eighteen Grammar Schools and nine Primary Schools, less than ten cases each. Scholars are much more regular and punctual in attendance than formerly. In one school with an average attendance of forty-seven pupils, there has been only one case of tardiness during the year; two schools report two cases each; three schools, three cases each.

EXHIBIT OF ALL THE GRAMMAR SCHOOLS.

SCHOOLS.	TEACHERS.	Average whole number.	Average attendance.	Per cent of attendance.	Number of tardinesses.	Number of dismissals.
Forster	J S. Hayes	49.7	48.5	97.6	2	10
"	M. E. Northup	43.5	41.5	95.4	3	27
"	F. M. Guptill	54.0	51.1	94.6	4	19
"	A. A. Batchelor	50.1	47.5	94.8	8	20
"	N. M. Whitney	54.4	51.4	94.5	6	10
Prescott	G. A. Southworth	37.9	37.3	98.4	2	1
"	V. E. Hapgood	48.6	47.4	97.5	1	14
"	Adelaide Reed	35.4	34.2	96.6	4	25
"	F. P. Hudson	33.0	31.8	96.4	4	20
"	A. A. Anderson	46.6	45.0	96.6	7	15
"	A. I. Sears	47.6	46.2	97.0	3	20
"	N. W. Proctor	57.1	55.1	96.5	9	20
"	C. T. Brown	47.9	45.8	95.6	8	56
"	Clara Taylor	50.1	48.3	96.4	14	18
Edgerly	A. A. Cowles	49.3	45.5	92.3	29	85
"	H. N. Sands	51.1	47.5	92.9	66	48
L. V. Bell	Robert Bickford	39.4	37.4	94.9	6	15
"	C. A. Battles	46.6	45.1	96.8	3	19
"	L. L. Gordon	44.8	42.2	94.2	10	32
"	E. M. Gooding	45.1	43.3	96.0	14	29
"	C. S. Plimpton	42.2	41.2	97.6	19	14
"	A. C. Hunt	42.0	39.1	92.1	33	56
"	F. A. Wilder	40.4	37.2	92.8	11	19
"	A. M. Snow	53.0	50.0	94.3	27	30
"	L. J. Page	53.2	49.4	92.8	23	40
* "	M. E. Berry	42.9	40.4	93.9	3	6
Prospect Hill	A. A. Roberts	53.0	50.2	94.1	24	65
"	Maria Miller	42.8	41.0	95.8	55	42
"	A. C. Damon	49.6	44.8	93.3	26	50
"	Ellen Ledyard	50.8	47.4	93.2	29	53
Brastow	S. E. Pennock	42.5	40.7	95.7	39	8
Bennett	Helen Tincker	53.9	50.4	93.5	29	9
Jackson	L. W. Shelton	48.8	45.8	93.8	65	17
Webster	A. L. Sanborn	47.0	45.0	95.7	26	10
Morse	C. C. Hunkins	23.4	22.9	98.3	5	22
"	N. P. Nichols	40.1	38.9	97.0	27	34
"	P. S. Downes	47.3	46.2	97.6	5	17
"	H. H. Weld	48.9	45.8	93.7	46	32
"	A. E. Sawyer	47.0	44.4	94.4	41	40
Beech Street	M. A. Haley	38.7	36.3	93.8	36	33
Franklin	J. E. Clark	34.8	32.7	93.9	41	34
"	"	35.8	33.2	92.8	38	28
Lincoln	G. E. Nichols	31.8	30.4	95.6	4	37
"	Jennie Colburn	44.1	41.7	94.8	53	56
"	Georgiana Cutter	39.0	36.3	93.1	62	47
"	L. J. Conwell	45.9	43.4	94.5	39	37
* "	A. F. Hills	45.6	43.8	96.0	14	14
Cedar Street	Alice Simpson	38.8	35.1	90.5	87	44
		2155.5	2045.8	94.8	1,110	1,397

HIGH SCHOOL.

The High School continues to merit the favor with which it has ever been regarded by our citizens.

Whole number of different pupils during the year	338
Average whole number for the year	226.8
Average attendance	219.9
Per cent of attendance	96.9
Largest number at one time	246
Number admitted during the year	101
Number graduated	34

The number graduated is forty-two per cent of the number of pupils forming the class on entering the school.

Number who have left the school during the year, exclusive of the graduates	68
Whole number at the present time	236
Number over fifteen years of age	204
Number in course preparatory to college	64
In the first class	9
“ second class	15
“ third class	19
“ fourth class	24
Number pursuing the regular course	119
Number pursuing the English course	49
Number of pupils in the first class on entering the school	86
Number at the present time	27
Number in the second class on entering the school, Number at the present time	83 47
Number in the third class on entering the school	95
Number at the present time	66
Number in the fourth class on entering the school	100
Number at the present time	96

At the beginning of the school year the fourth class contained eighty-five pupils who were graduated at the Grammar Schools in June last; three who were members of the fourth class of last year; two who entered the school last year but remained only a brief period; ten who were received from schools outside of the city.

Fifteen of the thirty-four pupils who were graduated in July

last had pursued the course preparatory to college. Of this number, fourteen were examined for admission to college, and all were admitted. Two of the graduates entered the Institute of Technology, and one the Harvard Medical School.

The increase in the number of young ladies in the course preparatory to college is a noticeable feature of the school. Frequently they constitute half the class. Their rank in scholarship in the High School, and the honors secured by them in the several colleges which they enter, are equal to those of the young gentlemen with whom they are associated. Of the young ladies who have graduated in this department, there are at the present time students in Boston University, Smith College, Colby University, Vas-ar College, and in the course under the professors of Harvard College.

The three departments of the school — English, Regular, and Preparatory to College — present a wide range of studies, and furnish ample facilities for preparation for any contemplated pursuit, or for a more advanced course of study. Although the course of study in each department is definitely prescribed, yet those who wish to enter any scientific or professional school can, by joining regular classes in those departments, gain the requisite preparation as quickly as their capacity will allow.

It is cause for congratulation that the number of persons in our city who avail themselves of the advantages afforded by the High School is greater proportionately than the average number in attendance in the neighboring cities. We would encourage its increase. Ordinarily, men whose qualifications are most ample achieve the greatest success in their various vocations. Qualifications that insure eminence in any calling are the result of special training; but special training is most valuable when it has for its basis a liberal education and broad general culture. We would therefore counsel the young, whatever may be their contemplated work in life, to pursue their general education as long and as far as their circumstances will permit, before they turn aside to enter upon special training for their chosen calling.

We would urge upon our pupils the importance of forming, early in their course, a definite aim and purpose. It is very noticeable that those who study for a specific object secure a higher rank in scholarship than others with equal ability but whose work is aimless.

The school is in need of some additional apparatus. A microscope of much greater magnifying power than the one now in use, a telescope, and a theodolite would greatly increase the interest in the studies requiring their use.

TWENTY-SEVENTH ANNUAL EXHIBITION OF THE SOMERVILLE
HIGH SCHOOL, TUESDAY, JULY 1, 1879.

ORDER OF EXERCISES.

SINGING. — Chorus: Festival Hymn. *Buck.*

1. SALUTATORY IN LATIN. *WILLIAM D. SULLIVAN.*

2. READING. — The Convict Ship. *NELLIE A. HAMBLIN.*

3. ESSAYS. — *The Mission of Boys.* *NELLIE A. WOODS.*

Experience, Labor, and Hope. *WALTER F. CHAPIN.*

4. READING. — Nellie Latine's Wedding. *Baker.*

MINNIE L. CRANE.

SINGING. — Trio. (Piano Accompaniment.) *Campana.*

Chorus: Spinning Wheel. (Female Voices) *Wagner.*

5. From "School for Scandal" (Original Translation into Greek.)

JAMES H. EASTON, MARY A. CHAPIN.

6. DECLAMATION. — The Baron's Last Banquet. *CHARLES L. HOLT.*

7. ESSAYS — *Labor Lost.* *MINNIE S. CRANE.*

Trimmings. *ALICE L. CRANE.*

8. ORIGINAL CONTRIBUTIONS. *ANNIE L. BARBER.*

Recess.

MUSIC. — March: A Midsummer Night's Dream. *Mendelssohn.*

ORCHESTRA.*

SINGING — Alto Solo and Semi-chorus: The Nixie. *Rubinstein.*

9. "Le Songe d'une Nuit d'Été." (Arranged from Shakespeare.)

WALTER S. BARNES, JR., CHARLES A. DODGE, JOHN D. PENNOCK,

EDWARD E. SABEN, GEORGE L. TAFT.

10. POEM. *FRANK H. OLIVER.*

* Hadley's Orchestra.

11. READING. — Harras. (German.) *Koerner.*
ELIZA L. SCHUH.
12. ESSAY. — *The Old Dining Table.* CHARLES E. ROBINSON.
SINGING. — Semi-chorus: Paradise and Peri. *Schumann.*
Chorus: "United, etc." *Buck.*
13. READING. — The Ride of Collins Graves. *O'Reilly.*
FLORENCE M. MORTON.
14. READING. — The Sad Lot of Mr. Knott. *Lowell.*
CHARLES W. HOPKINS.
15. READING. — Nisus et Euryalus. LIZZIE F. COTTON.
16. PROPHECIES. KATHARINE W. WOOD.
SINGING. — Trio and Chorus: Prayer, "Moses in Egypt. *Rossini.*
Unison Solo: Les Rameaux. *Faure.*
(Instrumentation by S. Henry Hadley.)
17. VALEDICTORY. ALICE W. HAYWARD.
18. PRESENTATION OF DIPLOMAS by MAYOR GEO. A. BRUCE.
19. PARTING HYMN.

MEMBERS OF THE GRADUATING CLASS.

Celia Sophia Bagster,
Ella Frances Colby,
Alice Louise Crane,
Minnie Louise Crane,
Minnie Saben Crane,
Clara Blanche Ellis,
Nellie Augusta Hamblin,
Alice White Hayward,
Florence May Morton,
Fanny Brown Sanger,

Eliza Lorette Schuh,
Carrie Mabel Smith,
Katharine Walker Wood,
Nellie Adams Woods,
William Grubb Bradshaw,
Lawrence Francis Brine,
Charles Albert Dodge,
Ellsworth Fiske,
Charles Watson Hopkins.

OF THE COURSE PREPARATORY TO COLLEGE.

Annie Leland Barber,
Mary Antoinette Chapin,
Lizzie Frances Cotton,
Hattie Elizabeth Moulton,
Walter Saunders Barnes, Jr.,
Walter Freeman Chapin,
James Hamlet Easton,
Charles Lewis Holt,

Hugh Bernard Kelly,
Joel Edward Lawrence,
Frank Howard Oliver,
John Downer Pennock,
Charles Enoch Robinson,
Edward Emerson Saben,
William Dunning Sullivan.

PUPILS. — It appears from the census taken by the truant officer, that there were 4,500 persons in the city between five and fifteen years of age, on the first day of May last.

In Ward One	1,342
“ Two	1,557
“ Three	782
“ Four	819
Increase for the year	76
Whole number of pupils in attendance in May	4,324
Number over fifteen years of age	371
Whole number in attendance in December	4,521
In the High School	235
“ Grammar Schools	2,260
“ Primary Schools	2,026
Number over fifteen years of age	253
Whole number of pupils registered during the year	5,162

Taking the average whole number as a basis, the High School has contained 54.4 per cent, the Grammar Schools 51.72 per cent, and the Primary Schools 42.84 per cent of the pupils during the year. Average number of pupils to a teacher in the High School, 37; in the Grammar Schools, 45; in the Primary Schools, 51.

TABLE SHOWING THE NUMBER OF PUPILS IN EACH OF THE THIRTEEN CLASSES, IN DECEMBER.

SCHOOLS.	CLASSES.	BOYS.	GIRLS.	TOTAL.	AVERAGE AGE.
High	First	5	22	27	18 years 5 months.
“	Second	15	32	47	17 “ 7 “
“	Third	25	40	65	16 “ 6 “
“	Fourth	43	53	96	15 “ 8 “
Grammar	First	77	70	147	14 “ 7 “
“	Second	103	120	213	13 “ 10 “
“	Third	148	183	331	13 “ 3 “
“	Fourth	223	223	446	12 “ 4 “
“	Fifth	267	250	517	11 “ 2 “
“	Sixth	302	304	606	10 “ 2 “
Primary	First	272	260	532	8 “ 10 “
“	Second	307	305	612	7 “ 9 “
“	Third	475	407	882	6 “ 5 “
Total		2,262	2,259	4,521	

MUSIC. — In relation to this interesting branch of instruction, it has been well said that “singing should constitute a part of every regular course of instruction in school. It should be practised daily in every department, for the immediate pleasure it gives, for the æsthetic culture which it affords, and for its beneficial results in school discipline.”

Under the direction of our skilful and enthusiastic leader, who receives the cordial co-operation of all the teachers, our schools are making gratifying progress, not only in the art, but also in the science of music. Pupils in the upper classes of the Grammar Schools read ordinary music at sight, with great facility, and pupils in the several classes of the High School, music of high order.

EXPENDITURES FROM JAN. 1, 1879, TO JAN. 1, 1880.

BY THE CITY COUNCIL.

Repairs and permanent improvements,	\$7,980 97	
Insurance	60 00	
Rent of school-rooms	701 67	
Fuel	3,040 71	
		<u>\$11,783 35</u>

BY THE SCHOOL COMMITTEE.

Teachers' salaries	\$63,833 44	
Superintendent's salary	1,800 00	
Janitors' salaries	3,281 12	
Truant officer's salary	775 00	
Water	365 74	
Gas	311 76	
Printing	277 45	
Books	718 25	
Writing books	219 23	
Stationery and other school supplies	699 17	
Miscellaneous	963 48	
		<u>73,244 64</u>

Total expenditures	\$85,027 99
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RECEIPTS.

Tuition of non-resident pupils	\$112 00	
Rent of school halls	392 25	
Sundries	103 00	
		<u>607 25</u>

Net expenditures	\$84,420 74
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METHODS OF TEACHING. — Mr. Webster, in opening his memorable speech in reply to Hayne, said, “When the mariner has been tossed for many days, in thick weather and on an unknown sea, he naturally avails himself of the first pause in the storm, the earliest glance of the sun, to take his latitude, and ascertain how far the elements have driven him from his true course.” At no previous period has the subject of education received such general attention from all classes as is manifest at the present time, nor has there ever existed such a diversity of opinions in regard to systems of education and methods of instruction as are now entertained and zealously advocated by eminent and leading educators. It is important, therefore, that our observations and comparisons should be critical and frequent, in order that we may ascertain the drift of true progress, and may secure to our school's the continuance of the high relative standing which they have hitherto maintained.

This diversity of views, emanating from such respectable sources, may be confusing to those who are seeking guidance and are anxious to adopt and apply the best methods of teaching, and may suggest the inquiry, Who shall decide when leaders of distinction disagree? but it is not to be deprecated. Truth is many-sided, and is best revealed when viewed in all its phases by many observers. “In the multitude of counsellors there is safety.” Nature presents no duplicates; but

“All nature's *difference* keeps all nature's peace.”

An eminent writer says, “As discords have their place in harmony, and abound the most in the music of the greatest masters, so must we expect diversities of views among thinkers; and the more vigorous and original the style and trains of thought, the more will differences present themselves. The intellect of the race will not flow in channels marked out for it by *authority*, as molten iron follows the grooves and fills the moulds which the workman has prepared. Strong thinkers claim the right to choose their own methods of investigation, their own points of view, and their own paths in the pursuit of truth; and we must not be ready to declare war against everything that ‘follows not with us,’ so long as it does not lay violent hands on that which is fundamental.”

Doubtless, many theories of teaching, now in popular favor, are destined to a place among the numerous discarded methods with which the path of education is thickly strown; but their considera-

tion and general discussion evolve important principles that contain elements of perpetuity and intrinsic value. Teachers who are ever devising new and better methods of instruction indicate thereby their dissatisfaction with present attainments, and that their ideal is in advance of their achievements. It has been wisely said, "Whoever is satisfied with what he does, has reached his culminating point: he will progress no more."

Various methods of teaching possess excellences which may be adopted with profit; but no mode of instruction yet devised is so pre-eminent that it may be regarded as *the method* which all should pursue. Enterprising teachers study all methods and acquaint themselves with the practice of the most eminent of their profession; they profit by many suggestions and gather instruction from all sources; but the specific methods which they apply in their daily practice should be of their own arranging, and they should be permitted to exercise great freedom in modifying or changing their modes of instruction to adapt them to the varying necessities of their pupils; otherwise, they are fettered in their work, their individuality is suppressed, and as a consequence, their efficiency is impaired. As Herbert Spencer says, "Proofs are abundant that human nature is difficult to manipulate. Methods apparently the most rational disappoint expectation, and the best results frequently arise from courses which common-sense thinks impractical." Hence versatility of ingenuity in devising and varying modes of instruction is essential to eminent success, and teachers should not be restricted in its exercise.

In their general features all well-regulated schools are essentially similar. Great uniformity exists in the courses of study pursued in all the cities and important towns in the Commonwealth, and the order of their arrangement is substantially the same. Consequently when scholars of ability and good standing in their respective classes are transferred from the schools of any city to classes of similar grade in any other city, they find themselves among their peers in attainment and mental development, however diverse the special methods of teaching pursued in those schools may be. Careful observation and a familiar acquaintance with different schools, under the direction of competent and enthusiastic teacher, but teachers who entertain theories in regard to education diametrically opposed to each other, will prove that in their practical working, these schools are substantially similar and secure results equally advantageous and meritorious. The routes pursued may

differ in many particulars, but they all converge to the same terminus.

This uniformity in courses of study, and similarity in the general management and results of all meritorious schools, arise from the fact that prevailing systems of education are all based upon certain general principles concerning which leading educators are in accord, — principles that are fundamental and admit of no controversy. It is an interesting and encouraging fact that many of the questions on educational topics, which elicit so much discussion at the present time and attract such a degree of public attention, are not, after all, vital questions, and do not pertain to leading principles of education nor affect materially the desired results, but relate rather to the different modes of applying general principles and to the more minute details of school work.

The more intimate is our acquaintance with men of various types of belief, the stronger will our convictions become that the real sentiments of all well-meaning, right-minded men, upon all questions of vital importance, are nearly identical. Their differences, in this regard, are more in expression than belief.

We will briefly consider some of the topics in education concerning which leading educators are in harmony.

Scope of Education. — Great unanimity of sentiment prevails in regard to the ends to be secured in education. Any system of education is considered defective that does not aim to secure the harmonious development of the powers and faculties of our entire being, — physical, intellectual, and moral. In efforts, therefore, for the promotion of intellectual culture, which is more especially the work of the public schools, great care is exercised to avoid whatever tends to impair physical health or to dwarf the affections and moral susceptibilities. The apportionment of studies, the time and labor demanded for school duties, the construction of school buildings, methods of heating and ventilating school-rooms, — indeed, all educational appliances, — are made to conform as far as possible to hygienic laws. Teachers are selected with special reference to their fitness to meet the requirements of the General Statutes in regard to moral culture, and to the formation of character.

Courses of Study. — Allusion has been made already to the great uniformity that prevails in all important places in regard to courses of study. This agreement is the result of the general concurrence of all, in respect to the kinds of studies most promotive of general culture and the kinds of knowledge most helpful in the performance of the duties of life.

Order in Mental Growth. — The great similarity in the order of arrangement of various courses of study is evidence of a general agreement in regard to the natural order of development of the mental faculties, and of the desire and effort of all educators to adapt studies to the capacity of the young at different stages of intellectual growth.

This is a vital matter in education, and the general concurrence of sentiment in regard to it is cause for congratulation. Any one who remembers the order of his own mental growth, or with careful scrutiny measures the capabilities of children with whom he comes in close contact, realizes that no part of a teacher's work requires more thoughtful attention and the exercise of sounder judgment than the proper adaptation of instruction to the capacity of his pupils at different periods of advancement. "To everything there is a season, and a time to every purpose." Any attempt to teach children prematurely those things which will come to them, as by intuition, at the proper age, is an inexcusable waste of time and vital force. As our observation cannot extend beyond the sensible horizon, so should our teaching be limited to the range of the child's mental vision.

A distinguished writer upon educational subjects says in relation to this point, "It often happens that you try a pupil with a peculiar subject at a certain age, and entirely fail; wait a year or two, and you succeed, and that without seemingly having done anything expressly to lead up to the point, although there will inevitably be, in the mean time, some sort of experience that helps to pave the way."

Oral Teaching and Oral Objective Methods of Instruction. — These are terms of comparatively recent application to time-honored practices.

Oral teaching includes lectures, conversations, verbal explanations, and illustrations. Very little instruction is imparted in the schools that is not oral. When the teacher, in his endeavor to awaken interest, secure attention, and reach the understanding of his pupils, accompanies his oral teaching with the presentation of the real object of study, he furnishes an example of oral objective teaching.

Oral teaching, when intelligently and effectively applied, leads pupils by an easy gradation from the known and familiar to the unknown; from the concrete to the abstract; from the simple to the complex; from a familiar acquaintance with processes and

facts to definitions, rules, and general principles. It has regard to the following order of precedency: "Ideas before words; objects before names; thoughts before sentences; knowledge before definitions, rules, and general principles." It recognizes the fact that "knowledge is easy to him that understandeth." It reverses the mere rote system, now passing into disuse, which requires the *verbatim* memorizing of the words of the text-book, the recital of definitions, rules, and general principles prior to a knowledge of the processes upon which they are based.

Great prominence was given to the oral objective method by the eminent Swiss educator. It is said that Pestalozzi, at Stanz, undertook the instruction of one hundred homeless and ill-clad boys. His school-room, which was in an old deserted convent, was destitute of everything except rude benches. He had neither books nor apparatus, and consequently was compelled to resort to oral teaching. He had, however, ingenuity, enthusiasm, an unfaltering purpose, and the true instincts of a teacher. Out of his necessities were evolved methods of teaching which have been constantly increasing in popular favor, and have secured to their originator a world-wide renown.

All teachers of experience and skill are in accord in regard to the importance of oral instruction when it is wisely applied. Discussions in relation to it pertain to the *extent* of its use rather than to its value.

The enthusiastic teacher who adopts this method needs to guard against the tendency of teaching too much. There is the danger that he will perform, not only his own legitimate work, but that also which properly belongs to his pupils. Mr. Dickinson, Secretary of the Board of Education, in his very able report of last year, says: "The oral teacher should remember that he has performed his duty when he has presented proper occasions for ideas and thoughts, and has taught the language by which they are to be expressed. *The observing and the reflecting must be done by the pupil himself.*" He further says, "It should not be forgotten by the teacher that the mind acquires facility in producing any of its states by the exercise of producing them; and in performing any act designed to affect external things, by practice in performing that act."

It should be remembered that labor is the standard of value in the department of intellect as well as in trade and the mechanic arts. There is a general law in accordance with which success is

proportioned to the labor expended. Mental activity is the law of mental growth. The more our pupils can be induced to accomplish for themselves, the more rapidly will they develop intellectual power. The Great Teacher has said, "He that *doeth truth* cometh to the light."

The opinion, entertained by some, that oral teaching supersedes the necessity for the use of text-books, we regard as fallacious. Oral teaching, wisely employed, supplements the written text, stimulates the mental activities of pupils, and excites a desire to search for the knowledge which the text-books contain.

Upon this point, Alexander Bain says, "There can be no teaching except on a definite plan and sequence; and good, instead of harm, arises from putting the plan in print. The grammar teacher, *e. g.*, working without books, either tacitly uses some actual grammar, or else works upon a crude, untested, irresponsible grammar of his own shaping. . . . What is printed is only what is proper to be said by word of mouth; and if the teacher can express himself more clearly than the best existing book, his words should be written down and take the place of the book. No matter what may be the peculiar felicity of the teacher's method, it may be given in print to be imitated by others, and so introduce a better class of books; the reform that proposes to do away with books entirely thus ending in the preparation of another book."

DISCIPLINE. — To secure good order, which is indispensable to a good school, there must be discipline. The basis of discipline is the right to require and the ability to enforce obedience. When these are recognized, and the will of those in authority is acquiesced in, there is harmony.

The right of teachers to enforce submission is legalized by the General Statute that places them, while pupils are under their charge, in the position of parents. Communities recognize the right, and when exercised with discretion, it is rarely questioned.

To maintain good discipline in accordance with a prevailing sentiment adverse to the infliction of corporal punishment, is a problem still in process of solution. On one side — and against the infliction of punishment — stand popular sentiment and the inclination and strong desire of those having the schools in charge; and on the other, what seems to be the ever-recurring necessity for its infliction. Our course is a compromise. We deem it unwise and impracticable to abolish corporal punishment altogether, but it

is retained as a reserve, to be called to the front only in extreme cases and as a last resort. Even then it is to be used with great discretion.

Teachers who maintain good order without resorting to corporal punishment, or other means equally objectionable, are held in high esteem.

A wise man has said, "If you would control your pupils, control yourself. Provoke them not by petty punishments, by perpetual fault-finding, by continual criticism, by irritating little comments, by changeful moods, by irritation and anger in your own mind." It is said that "The beloved master of Rugby obtained his wonderful empire over the hearts of hundreds of rough, daring English boys, because, being the manliest of men, he could fully sympathize with the most boyish of boys; because, also, he set his foot with terrible earnestness upon evil, first in himself and then in those under him. With faults incident to immaturity he had untiring patience. He expected a boy to be a boy, and while he was the master he was equally the friend."

MORAL CULTURE. — The greatest and noblest work of the public schools is the formation of character, — the proper moral training of the youth composing them.

It is a great and important work to cultivate the intellect, to develop mental power, to furnish the young with the knowledge and the skill that will assist them in the conflict of life and aid them in securing for themselves an honest independence. But when all this is accomplished, our work is but partially and imperfectly performed if we have neglected the proper moral training of our pupils; if, in consequence of our instruction, they do not enter upon their life-work with a higher type of manhood, with nobler aims, with greater strength to resist evil, and with a firmer purpose to achieve whatever is noble and true.

We are not in sympathy with the sentiment sometimes expressed, that the cultivation of the intellect is the exclusive province of the public schools. Many events have transpired in our country during the past few years which indicate great lack of social and civil morality, and weaken our confidence in the opinion so generally entertained, that in the intelligence of the people is to be found the true stability of our free institutions.

Professor Huxley, in commenting upon the dangers which threaten the overthrow of our government, says, "The one condition of

success — your sole safeguard — is the moral worth and the intellectual clearness of the individual citizen.” President Gregory, of the Illinois Industrial University, says, “The history of nations has over and over again demonstrated the fact that simple intellectual culture, or simple increase of knowledge, will not, in and of itself, make a people moral and upright.” He further says, “It is true, that without the moral element in the education of the citizenship of this country, in the common schools, there is no just claim on which our school system can be maintained at public cost.”

Each succeeding year strengthens the conviction, long entertained, that the first, the paramount duty of every teacher is the proper moral training of his pupils. We deprecate the propagation of any narrow sectarian dogmas in a public school, but we would have our schools permeated with a morality broad as our duties and obligations. This, however, is not to be accomplished by formal lectures or prosy homilies, but by the pervading presence and influence of a teacher who is quick in observing and wise in improving the ever-recurring opportunities, whose spirit is in full sympathy with his teachings, who is an embodiment of whatever it is desirable that his pupils should become, from whose example will emanate an unconscious but irresistible influence that will leave its impress upon the character of his pupils, and will be manifest in their lives.

We would respectfully solicit the attention of every teacher to the following eloquent words of one amply qualified to impart instruction upon this important subject: “Moral instruction can hardly be made a rigid specialty in common schools, but must be the overwatching spirit, the informing life of all methods of instruction and discipline. Its seat is the soul of the teacher, it must pervade the whole organization of the school. It must travel on with everything else, and its results will be seen in the gradual uplifting of the whole type of school character and conduct, in the raised ideals and the finer aspirations of the community of children. God’s way of lighting up the world on a summer morning is to roll the sun over the eastern horizon, and awaken earth and sky and ocean to a glory that transforms creation and leads on the day, through marvellous gradations of shadow and light. The divine method of moral instruction in a common school is that a cultivated and consecrated man or woman should rise upon it, at nine o’clock in the morning, and lead it through light and shadow, breeze and calm, tempest and tranquillity, to the end. All special

methods will flow out of him, as the hours of the day mark the course of the sun through the vault of heaven. In proportion as the teacher is taught of God and abides in the higher life of love, will it be known that moral instruction is the soul of the school."

In closing my twelfth annual report, I wish to express my warmest thanks to you, gentlemen, for your many kindnesses, to the teachers for their uniform and cheerful co-operation, and to the scholars whose respectful and kind greetings I am constantly receiving.

J. H. DAVIS,
Superintendent of Public Schools.

DECEMBER 27, 1879.

ANNUAL REPORT

OF THE

SOMERVILLE MYSTIC WATER BOARD.

1879.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Feb. 3, 1880.

Received. Referred to the Committee on Printing, with instructions to print the same in the Annual Report for 1879. Sent down for concurrence.

CHARLES E. GILMAN, *Clerk*.

IN COMMON COUNCIL, Feb. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk*.

CITY OF SOMERVILLE.

IN WATER BOARD, Jan. 14, 1880.

To the City Council of the City of Somerville :

The Somerville Mystic Water Board respectfully submit their annual report for the year ending Dec. 31, 1879, and accompanying it the report of the superintendent, embodied in which is a full statement, in detail, of the property of the city in water works, inventory of stock and tools, and the work performed under his direction during the year.

Referring to his report, it will be seen that the total amount of distribution pipe laid in the streets of the city to Dec. 31, 1879, is 44 miles and 4.332 feet.

Number of stop-gates set, 373.

Number of fire-hydrants set, 271.

Of these several amounts there have been laid and set, during the year 1879, 3,121 feet of pipe, 3 stop-gates, 2 flush hydrants, and 1 post hydrant.

There have also been laid 81 new service pipes, aggregating in length 5,014 feet, requiring 5,178 feet of trenching. Average cost of each service, \$20.81, — an excess over the average cost of the last few years, occasioned by the increased cost of material.

Water is now supplied to 3,515 dwelling-houses, 4,813 families, 162 stores and saloons, 10 churches. 21 offices, halls, and clubs, 27 manufactories, 78 public schools, 584 stables, 271 fire-hydrants, 8 public drinking-fountains, and 40 miscellaneous.

Value of water works, Dec. 31, 1879, \$341,000. Details of the expenditures on the construction, maintenance, and service account may be found in the report of the City Treasurer.

In the early part of the year 1879, the special attention of the Board was called by the superintendent, to the decaying condition of the pipe in Cross, Cutter, Franklin, Ellsworth, Mt. Vernon, and Mt. Pleasant Streets. These pipes were laid in 1865 under contract with the American Patent Water and Gas Pipe Co., and were warranted for only five years. On examination, their condition was found to be such as demanded early attention, and the Board

found it necessary to ask a special appropriation that we might relay Mt. Pleasant, Franklin, and Cross Streets.

In Mt. Pleasant Street we have laid 602 feet of six-inch pipe, and in Franklin Street 1,154 feet of eight-inch pipe, using a cast-iron sleeve for the joints, which we believe to be a very great improvement over the sheet-iron sleeve, in general use, giving greater firmness and solidity to the pipe, and securing a perfect joint.

Cross Street having had considerable expense laid out upon it in repairs, occasioned by several bad breaks that occurred before receiving the appropriation asked for, it, and other business in connection with the water works pressing upon us continually, — calls from water-takers on account of the filling up of service pipes, stoppages caused by rusty corporations and gates, breaks in old pipes, and an unusual amount of time required in flushing pipes all through the city, because of the unusual accumulation of matter resulting from the filthy condition of the Mystic water during the last season, — have prevented our relaying that street.

In uncovering the old pipe referred to, we have found that where it was properly covered and lined with good cement, it was well preserved; and where, as in many instances, it was decayed and worthless, the cement was worthless, being composed largely of sand, or the iron poorly riveted, and offering but little resistance to the pressure upon it. Unfortunately for the city, there is reason to believe that much of the pipe laid in the streets above referred to, and indeed in all the streets where the American Patent Water and Gas Pipe Co. laid four and six inch pipe, will be found in this poor condition, making it necessary for the City Council to grant as large appropriations as may be consistent with the economy that is wisely being practised, that this worthless pipe may, as speedily as possible, be replaced by the superior quality of pipe that is now being made and used by the Board.

The six-inch pipe in Cedar Street, running under the Lowell Railroad, and thence across the grounds of John O'Connell, which has been a source of trouble and expense during the past three years, burst early in the spring, causing damage to his estate.

The Board decided to lay new pipe a distance of 170 feet, and when removing the old, found it imbedded in muck, and therefore liable to be always out of repair. The new has been laid on a firm foundation, with cast-iron sleeves, and no further trouble is anticipated.

The two-inch pipe supplying Oakland Avenue gave out in No-

vember, depriving about twenty families of water. An examination of the pipe was made, and the joints found to be broken in several places, caused by the settling of an old stone sewer running parallel to it. The Board decided to lay a new six-inch pipe, and also to set a new six-inch hydrant, in connection with it, for the better protection of this locality against fire, and 432 feet of pipe were laid, and a six-inch hydrant was connected with the same, and a six-inch gate leading from Marshall Street.

On account of the building of sewers, 46 feet of six-inch pipe on Walnut Street and 120 feet on Lynde Street were taken up and relaid, the expense of which was charged to the contractors and sewer department.

Repeated petitions have come to the Board, asking to have pipe laid in non-accepted or sparsely occupied streets, which petitions being refused, the Board have suffered much blame. It has been our habit to grant such requests *only* where the promised income would justify the expense to the city.

Soon after the organization of this Board, a conference was had with his Honor the Mayor, with reference to a modification of the contract made with the city of Charlestown for water, when it became apparent that his views, and those entertained by the Board and fully expressed in its report of 1878, were not in accord, and that it was his desire to have a special committee of the City Council make this its special work.

Although the order of July 2, 1878, giving full and discretionary power to the Water Board to act in this matter, seemed to be, and was in our opinion, still laying an obligation on this Board, we yielded to the Mayor's expressed wish, and have taken no action upon this much-vexed question during the year.

This is our answer to the oft-repeated inquiry, "Why does not the Water Board press this question to a settlement?"

We desire to call attention to the great and growing need of a system of "high service," in connection with our water works, and the demand which we think may with propriety and justice be made on the Boston Water Board for relief.

There are, in our opinion at least, two special reasons why the city government should consider this matter at an early day, and either through its Water Board or by special committee make careful inquiry into the best method of meeting the want of a large number of our citizens.

First. The very meagre supply of water afforded those of

our citizens living on Winter, Spring, and Central Hills, failing to meet their common need, or to offer a reasonable protection against fires ; and

Second. The large territory that would be made available and pay good revenue to the city, were the supply of water in any measure commensurate with the want.

The police have reported thirty-three leaks to this department the past year, thereby saving the city, in many instances, from serious loss, and for the promptness with which they have given us this assistance, we tender them our thanks.

To Mr. Thomas Daley, driver of Hose 1, for valuable assistance rendered on the night when the break occurred on Webster Street, our thanks are also due.

For further information respecting the condition of the water works, we would respectfully refer the City Council to the full and clear report of the superintendent, herewith submitted, whose constant care, day and night, of the city's interests, is deserving of our commendation.

EDWARD FOOTE.
EDWIN S. CONANT.
A. R. COOLIDGE.
MARTIN W. CARR.
HERBERT E. HILL.

SUPERINTENDENT'S REPORT.

To the Somerville Mystic Water Board:

GENTLEMEN, — The annual report of the Superintendent of the Somerville Mystic Water Works is respectfully submitted, comprising a statement of all work performed under my direction from Dec. 31, 1878, to Dec. 31, 1879.

Accompanying this report will be found an inventory of the stock, furniture, and tools belonging to the water works.

WATER PIPE LAID, GATES AND HYDRANTS SET, IN 1879.

LOCATION.	PIPE ID.				GATES SET.		Hydrants Set.
	8 in.	6 in.	4 in.	2 in.	6 in.	4 in.	
Belmont Street, north of Summer Street	78				
Bond Street, at Heath Street	1		
Elm Street, near Morrison Street	118					
Irving Street, at Broadway	1
Oakland Avenue, Marshall to School Streets	1	. . .	1
Summit Avenue, near Vinal Avenue	52	. . .	. . .	1	
Wallace Street, at Broadway	1
		118	130		2	1	3

WATER PIPE RELAID.

LOCATION.	8 in.	6 in.	4 in.	2 in.
Austin Street, near Broadway	16			
Beacon Street	28			
Boston Street, at Munroe Street	14			
Brook Street, at Cross Street			14	
Cedar Street, near Lowell Railroad		170		
Cross Street, at Bonair Street		14		
Cutter Street			7	
Dane Court, at Dane Street			14	
Dover Street, near Herbert Street			7	
Franklin Street, Broadway to Pearl Street	1,126			
George Street, near Broadway			7	
Gilman Street, near Walnut Street		7		
Glen Street, near Webster Street		7		
Highland Avenue, near Medford Street	7			
*Line Street, near Cooney Street			120	
Mead Street, at Claremont Street			7	
*Mead Street Passageway				40
Medford Street, near Somerville Avenue		14		
Moore Street, near Mead Street			14	
Mt. Pleasant Street, Broadway to near Perkins St.		602		
Mount Vernon Street, near Broadway			28	
Myrtle Street, near Washington Street	14			
Mystic Avenue, near Union Street		14		
Oakland Avenue, Marshall to School Streets		433		
Putnam Street, near Summer Street			7	
Somerville Avenue, at Allen Street		14		
*Tenney Court, at end			7	
*Walnut Street, at Mills Street		46		
Walnut Street, near Broadway		16		
Warren Avenue, near Union Square		7		
Waverly Street			14	
Webster Street, Glen to Franklin Street			42	
	1,147	1,402	288	40

DISTRIBUTION MAINS.

The distribution mains have been extended 248 feet during the year. The wrought-iron and cement pipes laid in Mount Pleasant Street in 1865, Oakland Avenue in 1857, and Franklin Street in 1863-4, and purchased of the city of Charlestown, were in a perishing condition, and have been replaced during the past season by new wrought-iron and cement pipe, with cast-iron clamps at the joints. The two-inch pipe in Oakland Avenue has been replaced by a six-inch pipe.

There are now about forty-five miles of mains laid in the city; upon this length fifty-one breaks occurred during the past year. These breaks were caused as follows:—

By rust	26
By defective pipe	14
By settling of earth	8
By picks	9

* Damaged during construction of sewer.

The pipe in the following streets is in the same condition as mentioned in my last annual report, and in my opinion should be relaid immediately :—

Cross Street, from Pearl Street to Broadway . .	1,150 feet.
Cutter Street, from Webster Street to Broadway .	90 “
Ellsworth Street, from Cross to Rush Streets . .	300 “
Mt. Vernon Street, from Perkins Street to Broadway,	600 “

The four-inch pipe in Webster Street, from Franklin to Glen Streets, a distance of four hundred feet, has caused considerable trouble during the year ; three breaks and a number of leaks have been repaired. Wherever examined it has been found in poor condition, and I would recommend the laying of a six-inch pipe in its place.

The Holland Street main, near and south of Elmwood Street, is leaking badly at the joints, caused by the settling of the filled street over a culvert ; considering it unsafe for use, the water has been shut off, and as soon as the weather will permit, it should be repaired.

SERVICE PIPES.

The whole number of services laid for family and other purposes has been 81. Total length of pipe used, 5,014 feet ; total length of trenching, 5,178 feet. Average cost of each service was \$20.81. Fifty-four breaks have occurred during the past year, and were caused as follows :—

By defective soldering, 8 ; by broken lead connections, 10 ; by defective couplings, 6 ; by laying of drains, 14 ; by freezing, 16.

Twenty-one services were stopped by fish. Seventy-one corporations which had become stopped by rust were retapped. Eight services on yard hydrants were repaired. Sixty-four cast-iron gate-boxes have been substituted for decayed wooden ones.

The old wooden gate-boxes are the cause of much complaint by our citizens ; many are now nearly useless, being much decayed and filled with earth and stones. I would respectfully recommend your Board that all the wooden boxes now in use in the city be removed, and substantial cast-iron boxes placed in their stead.

STAND-PIPES FOR WATERING STREETS.

Seventeen stand-pipes are now in use ; repairs have been made at a cost of \$44.40. I would recommend that your Board request

the Committee on Water to order the setting of four additional stand-pipes, so that the use of the hydrants for such purposes may be discontinued. The hydrants are intended for use in case of fire only, and their use for watering streets renders them unreliable in case of fire.

DRINKING-FOUNTAINS.

There are nine drinking-fountains now in use, five of which are in good repair. The small fountain in Union Square, which was broken by a team, has been repaired, and should be reset early next season. The watering-troughs on Medford Street and Broadway need new feed and waste pipes.

The fountain in Union Square, near the flagstaff, is frequently damaged by teams; the grade of the square has been raised and the fountain is now too low. The cost of raising and properly repairing the fountain would be considerable, and as it is not sufficient in size for this locality, I would recommend its removal and the construction of a new fountain similar to that at Davis Square, at a cost of about \$400.

The repairs upon drinking-fountains for the year amount to \$18.64.

STOP-GATES.

Three stop-gates were set, located as follows: --

One six-inch on Bond Street, at Heath Street; one six-inch on Oakland Avenue, at Marshall Street; and one four-inch on Summit Avenue, near Vinal Avenue, for a blow-off. Three stop-gates were removed, there being no use for them. They were located as follows: one six-inch on Irving Street, at Broadway; one six-inch on Summer Street, at Cedar Street; and one four-inch on Line Street, at Washington Street.

Repairs upon stop-gates have been made as follows: 18 have been repacked; 4 have had new spindles; 28 boxes have been replaced, and 6 been raised to the present grade of the street. A large number of boxes are very much decayed, and it will be necessary to change many of them during the coming season. The number of stop-gates now in use is 373.

HYDRANTS.

One post and two flush hydrants have been added this year; they were located as follows: One six-inch post hydrant on Oakland Avenue, near School Street; one flush hydrant on Irving Street, at

Broadway ; and one flush hydrant on Wallace Street, at Broadway. One hydrant on Mystic Avenue has been removed. Whole number now in use, 271. The amount charged to the Fire Department for repairing hydrants was \$159.75.

A complaint has been received from the Chief Engineer of the Fire Department that some of the hydrants are too low, thereby causing delay in connecting the hose, and that on others the post jackets have been so acted upon by the frost that they interfere with the outlets and waste, and are liable to render them useless if opened in the winter.

I have examined the hydrants referred to, and find that these hydrants were originally set at a proper grade, but the street has since been raised, and that the frost jackets were set in clayey soil. As a remedy I would recommend that the hydrants be raised to the proper grade, and that the soil about the frost jackets be removed and replaced by gravel.

BLOW-OFFS.

I desire to call the attention of the Board to the importance of arranging a proper system of blow-offs. During the last season it was necessary to frequently flush the distribution mains on account of the vegetable matter contained in the water ; the use of the hydrants for this purpose injures the streets, and the water is wasted.

I would recommend that sixteen blow-offs be constructed, each connected with a sewer ; the waste water will then be utilized in flushing the sewers.

SUMMARY OF DISTRIBUTION WATER PIPES LAID IN SOMERVILLE TO JAN. 1, 1880.

	Feet. 12 inch.	Feet. 10 inch.	Feet. 8 inch.	Feet. 6 inch.	Feet. 4 inch.	Feet. 3 inch.	Feet. 2½ inch.	Feet. 2 inch.	Total Miles and Feet.	
									Miles.	Feet.
Laid previous to Jan. 1, 1878 .	8,614.6	4,586.0	34,841.6	91,910.7	85,447.0	7,854.5	. . . .	1,388.0	44	2,322.4
Laid in 1878 . . . . .	. . . .	. . . .	440.0	986.0	48.0	18.0	270.0	. . . .	. . .	1,762.0
Laid in 1879 . . . . .	. . . .	. . . .	. . . .	551.0	130.0	. . . .	. . . .	. . . .	. . .	681.0
Total laid to Jan. 1, 1880 . .	8,614.6	4,586.0	35,281.6	93,447.7	85,625.0	7,872.5	270.0	1,388.0	44	4,765.4
Replaced by larger pipe . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	433.0	. . .	433.0
Total	8,614.6	4,586.0	35,281.6	93,447.7	85,625.0	7,872.5	270.0	955.0	44	4,332.4

STOCK ACCOUNT, JAN. 1, 1880.

MATERIALS ON HAND AT COST.

PIPE LINED.

73 feet 12 in. at	\$1 00	\$73 00	
13 " 10 "	80	10 40	
420 " 8 "	55	231 00	
602 " 6 "	38	228 76	
238 " 4 "	25	59 50	
			\$602 66

PIPE NOT LINED.

203 feet 10 in. at	\$0 50	\$101 50	
314 " 6 "	18	56 52	
84 " 3 "	12	10 08	
			168 10

SLEEVES ON HAND.

6 feet 12 in. at	\$0 15	\$0 90	
15 " 10 "	15	2 25	
16 " 8 "	15	2 40	
33 " 6 "	15	4 95	
50 " 4 "	15	7 50	
			18 00

GATES ON HAND.

2 4 in. at	\$18 00	\$36 00	
1 3 in. at	13 00	13 00	
9 2 in. at	7 00	63 00	
			112 00

SHEET-IRON BRANCHES LINED.

8 double 4 on 6 branches,	\$18 00	
2 " 4 " 4 "	4 20	
2 single 6 " 6 "	4 60	
2 " 3 " 4 "	4 00	
1 " 3 " 6 "	2 10	
		32 90

Amount carried forward,

\$933 66

Amount brought forward,

\$933 66

CAST-IRON PIPE.

16 feet 8 in , 800 lbs. at	4c.	\$32 00
15 " 6 in., 500 lbs. at	4	20 00
12 " 4 in., 270 lbs. at	4	10 80
1 " 4 in., special casting,		3 60
1 " 4 in., and 1 6-in. sleeve,		
66 lbs. at	4	2 64

69 04

SHEET-IRON ON HAND.

1 lot assorted sizes, 9,200 lbs. at	7c.	\$644 00
1 large gate cover,		3 00
2 " " frames,		7 00
8 small gate covers,		10 00

664 00

CAST-IRON BRANCHES LINED.

2 double 6 on 8 branches,		\$14 00
1 " 6 " 6 " "		6 00
6 " 4 " 4 " "		24 00
2 single 4 " 4 " "		7 50
4 " 6 " 8 " "		18 00
1 " 8 " 8 " "		5 00
2 " 6 " 6 " "		12 00
1 " 8 " 8 " "		5 00
3 " 4 " 8 " "		13 25

104 75

HYDRANTS ON HAND.

1 New Haven hydrant,		\$45 00
1 flush hydrant,		20 00
4 " " covers,		22 00
2 Boston hydrants,		80 00

167 00

SUNDRY MATERIALS.

300 feet boards,		\$9 00
9 bbls. cement,		12 60
8 loads sand,		8 00

Amount carried forward,

\$29 60

\$1,938 45

<i>Amounts brought forward,</i>	\$29 60	\$1,938 45
20 lbs. oakum,	1 20	
3 tons stove coal,	15 00	
25 8 inch clamp screws,	31 25	
7 6 " " "	8 05	
14 4 " " "	11 21	
8 brass padlocks,	12 00	
25 sheets emery cloth,	1 00	
Winding rope,	1 00	
150 lbs. nails,	7 50	
4 yds. enamelled cloth,	2 00	
1 stove,	21 00	
1 Peerless furnace,	40 00	
7 yds. cotton duck,	56	
120 lbs. rivets,	12 00	
4 hydrant valves,	3 00	
6 hydrant caps,	1 28	
4 lbs. manila rope,	60	
1 iron-bound block,	1 25	
24 rubber gaskets,	9 60	
$\frac{1}{2}$ bbl. tar,	2 50	
$\frac{1}{2}$ bbl. oil,	2 50	
10 ft. fuse,	20	
1 paint brush,	1 50	
4 grouting horses,	16 00	
10 oil cans,	6 00	
4 hydrant horses,	2 00	
10 bush. charcoal,	4 00	
3 new hydrant casings,	15 00	
1 sledge handle, 1 qt. measure,	43	
2 doz. flat files,	12 00	
4 stand-pipe collars,	2 00	
2 lbs. hemp packing,	1 00	
$\frac{1}{2}$ gal. turpentine,	20	
3 lantern boxes,	2 25	
$\frac{1}{2}$ ball marline,	75	
1 pr. Fairbanks scales,	10 00	
1 seven-inch gong,	4 00	
2 service box covers,	30	
<i>Amounts carried forward,</i>	\$291 73	\$1,938 45

<i>Amounts brought forward,</i>	\$291 73	\$1,938 45
16 street gate boxes,	1 92	
200 ft. spruce plank,	3 20	
	<hr/>	296 85

TOOLS FOR WATER WORKS.

1 lining stand and fixtures,	\$25 00	
1 punching machine,	250 00	
1 rolling machine,	200 00	
6 mandrels,	90 00	
3 mandrel frames,	10 00	
4 sets rollers,	45 00	
6 prs. clamps and rings,	17 00	
5 rivet sets,	1 50	
1 wire gauge,	1 25	
5 prs. snips,	5 50	
4 mallets,	1 00	
2 prs. bench shears,	5 00	
2 large square lanterns,	7 00	
18 tubular lanterns,	18 00	
15 old lanterns,	6 00	
2 derricks and tackles,	18 00	
100 ft. hand hose,	8 00	
200 ft. hydrant hose,	40 00	
2 saws, 1 bit stock and bits,	3 00	
1 jack plane, \$0.75, 1 oil stone, \$0.50,	1 25	
11 drills,	22 00	
3 spoons for blasting,	1 00	
1 reflector lantern,	2 00	
8 striking hammers,	16 00	
3 hydrant wrenches,	3 00	
1 breast drill,	4 00	
1 forge,	35 00	
1 anvil,	10 00	
4 pairs tongs,	3 00	
3 hot chisels,	2 00	
2 packing box wrenches,	4 25	
1 hatchet,	25	
1 carpenter's bench,	3 00	
	<hr/>	
<i>Amounts carried forward,</i>	\$858 00	\$2,235 30

<i>Amounts brought forward,</i>	\$858 00	\$2,235 30
10 cold chisels,	2 00	
4 tool boxes,	24 00	
3 pairs rubber mits,	2 70	
2 sledge hammers,	5 00	
3 crowbars,	5 00	
5 frost wedges,	8 00	
2 sand screens,	5 00	
1 flush hydrant wrench,	2 00	
8 gate wrenches,	18 00	
4 mending knives,	1 00	
12 water pails,	3 00	
2 water tubs,	1 25	
1 large water tank,	15 00	
4 mortar boxes,	16 00	
2 mortar hods,	1 00	
3 large tool boxes,	17 00	
1 wheelbarrow,	4 00	
24 picks,	24 00	
2 kettles,	1 50	
2 grindstones,	18 00	
30 shovels,	22 50	
2 tape measures,	1 00	
1 cutting bench,	2 50	
3 pairs rubber boots,	6 00	
1 pipe cradle,	1 00	
1 pipe vise,	5 00	
1 bench vise,	15 00	
2 common vises,	20 00	
1 farmer's furnace,	8 00	
1 pair hydrant tongs,	30	
1 branding iron (S. W. W.),	30	
1 improved tarring tank,	75 00	
2 step ladders,	6 00	
2 ratchets and drills,	22 00	
1 set calking irons,	1 00	
4 powder cans,	1 00	
5 lbs. gunpowder,	1 25	
5 punches,	50	
<i>Amounts carried forward,</i>	\$1,219 80	\$2,235 30

<i>Amounts brought forward,</i>	\$1,219 80	\$2,235 30
1 Baxter wrench,	1 25	
1 pair hose pliers,	75	
1 10-inch bevel square,	1 25	
12 flat drills,	3 00	
3 pairs flat tongs,	2 25	
3 oilers and 2 dippers,	2 00	
2 riveting hammers,	3 50	
2 hoes,	2 00	
3 snow shovels,	2 25	
4 rammers,	6 00	
2 ice chisels,	3 00	
1 claw hammer,	75	
Patters and bore boxes for cast-iron branches,	100 00	
1 set patterns for mandrels,	50 00	
2 tin tunnels,	1 00	
3 riveting bars,	80	
2 sets stencils, brush, etc.	3 00	
5 feet hydrant chain,	1 00	
1 small hand saw,	80	
8 monkey wrenches,	5 00	
6 Stillson “	13 00	
1 wrought-iron ditch pump,	14 00	
1 galvanized “ “	5 00	
1 large hydrant wrench,	4 50	
1 doz. lamp chimneys,	96	
	<hr/>	1,445 86

STABLE DEPARTMENT.

1 horse,	\$150 00	
1 express wagon with top,	150 00	
1 light business wagon,	60 00	
1 heavy express wagon,	125 00	
1 sleigh,	12 00	
1 pung,	75 00	
2 street blankets,	14 00	
2 stable blankets,	4 00	
1 buffalo robe,	15 00	
2 surcingles,	1 00	

<i>Amounts carried forward,</i>	\$606 00	\$3,681 1
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<i>Amounts brought forward,</i>	\$606 00	\$3,681 16
$\frac{1}{2}$ ton hay,	10 00	
1 bundle straw,	4 50	
225 bushels oats at \$0.50,	112 50	
1 collar, hames, and traces,	7 00	
1 express harness,	25 00	
1 light business harness,	10 00	
2 horse covers,	8 00	
1 rubber blanket,	2 00	
Pitchforks, brushes, etc.	5 00	
	<hr/>	790 00

OFFICE FURNITURE.

1 large desk,	\$16 00	
1 small “	5 00	
1 book rack,	3 00	
1 water gauge,	25 00	
1 plan, with curtain and frame,	30 00	
6 office chairs,	8 00	
1 Somerville Directory,	2 00	
1 carpet,	10 00	
	<hr/>	99 00

WATER-SERVICE MATERIALS.

2 iron service boxes,	\$3 00	
16 $\frac{1}{2}$ feet 1 $\frac{1}{2}$ in. lined to 1 $\frac{1}{4}$ in.	2 56	
128 “ 1 $\frac{1}{4}$ in. “ 1 in.	32 00	
285 “ $\frac{3}{4}$ in. rubber lined,	34 20	
8 $\frac{5}{8}$ in. shut-off cocks,	8 00	
44 lbs. cast-iron stopcock handles,	1 76	
1 self-closing faucet,	2 80	
1 1 inch peet valve,	2 50	
1 1 $\frac{1}{4}$ “ stop and waste R. W.	1 67	
9 $\frac{3}{4}$ “ mall. unions,	1 80	
20 $\frac{1}{2}$ “ “	3 00	
9 1 “ “	3 42	
11 $\frac{1}{2}$ “ spigot stop and waste,	9 35	
5 $\frac{3}{4}$ “ “ “	8 50	
2 $\frac{5}{8}$ “ “ “	3 00	
1 1 “ T handle stop and waste,	1 00	
	<hr/>	
<i>Amounts carried forward,</i>	\$118 56	\$4,570 16

<i>Amounts brought forward,</i>	\$118 56	\$4,570 16
1 1 inch spigot stopcock,	1 00	
12 1 $\frac{1}{4}$ " loose nipples,	6 00	
10 $\frac{1}{2}$ " solder nipples,	3 60	
5 $\frac{5}{8}$ " "	2 00	
340 lbs. mall. iron fittings,	85 00	
60 brass goosenecks,	15 00	
102 $\frac{1}{2}$ inch loose nipples,	25 50	
8 6 " service clamps,	5 20	
16 4 " "	8 80	
64 8 " "	48 00	
205 rubber rings for clamps,	6 15	
33 $\frac{3}{4}$ inch stop and waste cocks,	49 50	
21 $\frac{1}{2}$ " " "	29 40	
21 $\frac{3}{4}$ " " " with nipples,	31 50	
31 $\frac{3}{4}$ " soldering nipples,	6 20	
155 $\frac{1}{2}$ " " "	85 25	
2 Ludlow gates on 4 inch clamps,	10 00	
2 " " 6 " "	12 00	
1 3 inch clamp,	2 25	
7 10 " "	12 60	
9 12 " "	20 25	
1 1 $\frac{1}{2}$ " auger,	1 25	
281 lbs. new lead pipe,	19 67	
8 lead connections,	8 00	
2 $\frac{1}{2}$ lbs. copper wire,	75	
12 $\frac{3}{4}$ inch corporations,	15 00	
50 ft. block tin pipe, 20 cts.	10 00	
15 lbs. fine solder,	1 50	
	<hr/>	639 93

TOOLS FOR WATER SERVICE.

1 press and cones for lining pipe,	\$40 00
4 force pumps and couplings,	12 00
2 kettles and 2 ladles,	3 10
7 doz. service locks,	54 60
2 small hammers,	1 20
7 pairs pipe tongs,	10 50
1 new tapping machine, }	14 00
3 drills for same, }	
	<hr/>

<i>Amounts carried forward,</i>	\$135 40	\$5,210 09
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<i>Amounts brought forward,</i>	\$135.40	\$5,210 09
1 old tapping machine,	12 00	
1 rack saw,	1 50	
1 hydrant nut wrench,	3 00	
4 large hammers,	3 00	
1 oil can and oiler,	80	
6 soldering irons,	6 00	
2 monkey wrenches,	1 20	
1 shave hook, tap borer and ten pin,	1 00	
2 bending irons,	50	
1 pair flat nose pliers,	50	
1 " round " "	50	
3 service wrenches,	2 25	
5 pipe tap wrenches,	3 00	
2 pipe cutters and wheels,	12 00	
1 patent pipe wrench,	3 50	
1 " chain wrench,	4 50	
1 lead saw,	50	
6 trowels,	6 00	
1 No. 1 die plate and dies,	21 00	
1 " 2 " "	12 00	
1 " 3 " "	9 00	
1 set taps from $\frac{1}{2}$ inch to $1\frac{1}{2}$ inch,	7 00	
1 work bench,	12 00	
	<hr/>	258 15
Total,		<hr/> <hr/> \$5,468 24

NATHANIEL DENNETT,
Superintendent.

SIXTH ANNUAL REPORT
OF THE
CITY ENGINEER OF SOMERVILLE.
1879.

CITY OF SOMERVILLE.

IN BOARD OF ALDERMEN, Feb. 3, 1880.

Received and referred to the Committee on Printing, with instructions to print the same in the Annual Reports for 1879. Sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, Feb. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk.*

CITY OF SOMERVILLE.

CITY ENGINEER'S OFFICE, Jan. 15, 1880.

To his Honor the Mayor and the City Council :

GENTLEMEN, — The City Engineer presents the following Report for the year 1879.

SEWERS.

Fifteen thousand six hundred and ninety-one and seven tenths feet of sewers have been built during the year, as follows: brick, 7,588.7 feet; pipe, 8,103 feet. In these were built 76 manholes, 2 overflow chambers, and 3 flushing chambers, and 1,179 inlets. The following table will show the location, cost, assessment, length, size, etc., of each sewer : —

TABULAR STATEMENT OF SEWERS BUILT IN 1879.

LOCATION.			CONSTRUCTION.						COST.				
Name of Street.	From	To	Built by	Materials.	Size in inches	Manholes	Inlets.	Average cut.	Length in feet.	Cost per foot.	Total cost	Assessment.	Cost to city.
Adams Street .	Medford Street . .	near Broadway . .	Richard Falvey . .	Akron Pipe.	12	3	46	9.7	660.1	\$0 93	\$1,209 93	\$933 18	\$276 75
1 Broadway . .	n. Sargent Ave. . .	near Temple St. .	Martin Gill . . .	Brick . . .	18	1	24	11.4	296.0	1 58	468 05	354 24	113 81
Broadway Pl. .	Broadway	Southwesterly . .	Edward Fitzgerald .	Akron Pipe	12	1	11	10.1	159.5	1 29	205 60	Tenney Court.	205 60
Canal Street . .	Creek	Passageway . . .	C. as. A. Mongan . .	Brick . . .	24	2	14	9.3	197.5	1 40	See	Highland Avenue.	See
Cedar Street . .	near Hall Street . .	Northeasterly . .	Edward Fitzgerald .	"	20	0	9	6.5	105.0	1 37	See	Highland Avenue.	See
Cedar Street . .	end of brick sewer	Highland Ave. . .	Edward Fitzgerald .	"	12	2	19	9.7	272.7	0 94	See	Highland Avenue.	See
Central Street .	Medford Street . .	near Broadway . .	Patrick Terry . . .	Akron Pipe.	12	6	61	10.2	843.5	0 98	829 15	617 64	211 51
2 Chandler St. .	Park Avenue . . .	near end	Dennis O'Connell . .	"	12	2	28	9.2	371.0	1 05	390 49	294 87	95 62
3 Clarendon St. .	Me d Street . . .	Holland Street . .	Edward Fitzgerald .	"	12	3	48	9.3	529.0	1 59	844 25	584 40	259 85
Dane Court . .	Dane Street . . .	near end	Maurice Terry . . .	Brick . . .	24 X 17	3	3	48	4.7	0 86	491 64	381 49	110 15
Dover Street . .	Elm Street . . .	n. Orchard St. . .	Maurice Buttiner .	"	24 X 17	3	55	8.0	695.0	0 86	595 70	463 86	131 84
Elm Street . . .	Morrison Street . .	Northeasterly . .	City	"	24 X 17	0	9	9.5	100.0	1 06	167 52	126 00	41 52
4 Elmwood St.*	Holland Street . .	Cameron Ave. . .	Richard Falvey . . .	"	28	2	31	7.0	495.5	3 76	7,094 16	1,711 06	5,383 10
Frost Avenue . .	Dane Street . . .	Angle	Patrick Terry . . .	"	24 X 17	2	24	8.1	299.5	1 19	303 33	377 94	125 39
Frost Avenue . .	Angle	n. Somerville Av. .	Patrick Terry . . .	Akron Pipe.	12	1	16	9.3	215.0	0 68	See	Frost Avenue.	See
George Street .	Broadway	Angle	Edward Fitzgerald .	"	12	2	20	10.2	293.5	0 91	266 75	202 62	63 13
Hamlet Street .	Highland Ave. . .	near end	Chas. A. Mongan . .	"	12	3	33	9.1	461.0	0 92	422 06	325 57	96 49
Highland Ave. .	Cedar Street . . .	Southwesterly . .	Edward Fitzgerald .	Brick . . .	30	2	30	12.1	330.0	1 65	944 84	714 78	230 06
5 Holland St.*	Irving Street . . .	Culvert	Richard Falvey . . .	"	36	2	41	13.0	493.5	2 23	See	Elmwood Street.	See
5 Holland St.*	Culvert	Elmwood St. . . .	Richard Falvey . . .	"	30	1	25	15.0	353.0	2 82	See	Elmwood Street.	See
Ivaloo Street . .	Beacon Street . . .	Park Street . . .	Richard Falvey . . .	"	28 X 24	3	41	12.6	751.1	1 65	2,482 15	1,281 99	1,200 16
Joy Street . . .	Poplar Street . . .	Northerly	Richard Falvey . . .	Akron Pipe.	12	4	48	11.0	620.0	0 93	578 92	449 46	129 46
Line Street . . .	Washington St. . .	n. Cooney St. . .	Richard Falvey . . .	"	12	4	71	7.6	1,056.5	0 75	1,094 88	731 25	363 63
6 Medford St. . .	Central Street . . .	Adams Street . . .	Edward Fitzgerald .	Brick . . .	18	1	26	12.8	313.8	1 90	See	Adams Street.	See
7 Mead Street*	Cameron Avenue . .	Moore Street . . .	Richard Falvey . . .	"	33 X 22	2	28	17.2	462.3	5 14	See	Elmwood Street.	See
8 Passageway* .	Moore Street . . .	Newbury St. . . .	Richard Falvey . . .	"	30 X 20	1	11	14.7	236.7	3 18	See	Elmwood Street.	See
9 Mills Street . .	Walnut Street . . .	n. Sargent Ave. . .	J. McCarty	Akron Pipe.	12	2	30	8.7	468.5	2 11	1,759 57	1,033 60	725 97
10 Moore Street .	Mead Street . . .	Northeasterly . .	Dennis O'Connell . .	"	12	1	31	9.6	320.0	1 17	375 17	330 59	44 58
Morrison St. . .	end of old sewer . .	Elm Street	City	Brick . . .	24 X 17	0	4	9.5	58.0	1 06	See	Elm Street.	See
11 Newbury St. .	Passageway	Holland Street . .	Richard Falvey . . .	Akron Pipe.	12	4	72	10.8	802.0	2 31	1,848 75	1,026 39	822 36
Park Avenue . .	Wallace Street . . .	near Elm St. . . .	Dennis O'Connell . .	Brick . . .	24 X 17	2	37	10.0	435.0	0 98	424 84	320 63	104 21
Park Street . . .	Ivaloo Street . . .	Somerville Ave. . .	Edward Fitzgerald .	"	28 X 24	3	53	8.5	750.0	1 65	See	Ivaloo Street.	See
Tenney Court . .	Canal Street . . .	n. Mystic Ave. . .	Chas. A. Mongan . .	Akron Pipe.	12	3	47	10.7	576.0	1 29	1,021 75	766 55	255 20

¹² Walnut Street . . .	Mills Street . . .	Brick . . .	18	2	40	9.4	446.3	1 73	See	Mills	Street.
¹³ Walnut Street . . .	near Veazie St. . .	Dennis O'Connell .	12	2	35	8.9	454.7	1 22	556 84	421 02	135 82
Washington St. . .	Line Street . . .	Edward Fitzgerald .	24	1	13	11.9	232.0	1 31	See	Line	Street.
				76	1,179		15,691.7		\$24,575 34	\$13,449 13	\$11,126 21

REBUILT.

¹⁴ Broadway . . .	Sargent Avenue . .	Northwesterly . .									
Cedar Street . . .	Summer Street . . .	near Hall St. . .	Brick . . .	18	1	15	11.6	2 54	434 94	. . . . .	434 94
Dane Street . . .	Fitchburg R. R. . .	Frost Avenue . .	" . . .	20	2	32	6.0	1 41	451 91	. . . . .	451 91
Medford St. . .	Somerville Ave. . .	Northerly . . .	" . . .	28 X 24	2	19	8.0	1 67	523 15	. . . . .	523 15
Waverly St. . .	end of brick sewer	Southeasterly . .	Plank . . .	30	0	13	10.4	2 66	828 80	. . . . .	828 80
				36 X 30	0	0	2.7	1 80	285 70	. . . . .	285 70
					5	79		1,275.1	\$2,524 50		\$2,524 50

*Part of Holland, Elmwood and Mead Streets Sewer.

³ 90.25 cubic yards of ledge.	⁴ 70 cubic yards of ledge.	¹ 15 cubic yards of ledge.	² 27 cubic yards of ledge.
⁷ 382.93 cubic yards of ledge.	⁸ 25 cubic yards of ledge.	⁵ 205.83 cubic yards of ledge.	⁶ 32.9 cubic yards of ledge.
¹¹ 260 cubic yards of ledge.	¹² 106.5 cubic yards of ledge.	⁹ 180.5 cubic yards of ledge.	¹⁰ 24.85 cubic yards of ledge.
		¹³ 32.9 cubic yards of ledge.	¹⁴ 29.1 cubic yards of ledge.

Total length of sewers built previous to Jan. 1, 1879 133 667.1 feet.

Total length of sewers built during the year 1879 15,691.7 "

Total 149,358.8 " or 28.3 miles.

CLARENDON HILL SEWERS.

The main sewer in Holland Street was extended from Irving Street northwardly to Elmwood Street, thence southwestwardly in Elmwood Street about 320 feet, thence northwestwardly across private lands to Cameron Avenue, thence continuing in the same direction through Mead Street, a passageway and private lands to Newbury Street; lateral sewers connecting with this main were built in Claremon, Moore, and Newbury Streets.

That portion of the sewer between Irving and Mead Streets was laid with a slight inclination, and to provide for flushing, three brick chambers were constructed with brass eye-bolts built into the masonry for the attachment of flushing gates.

In the construction of the main and lateral sewers 1058.86 cubic yards of rock was removed at a cost of \$4,184.23.

The deepest excavation was on Mead Street, near its junction with Claremon Street, being twenty-four feet, about one half of which was solid rock.

The total cost of the sewers was \$9,903.57, exclusive of land damages; the amount assessed on the abutters was \$3,652.44.

SEWER OUTLETS.

The old wooden outlet of the Waverly Street sewer was found to be badly decayed and a cause of complaint to the residents in the neighborhood. In November the old sewer was removed, and replaced by a substantial wooden sewer, constructed of spruce timber.

PRIVATE DRAINS.

Two hundred and fifty-seven permits were issued for laying private drains, 244 for new connections, and 13 for repairs.

Three persons were licensed by the mayor and aldermen as drain layers, making the present number of drain layers twenty-one. Some of the work performed by the drain layers is unsatisfactory, and I would recommend that hereafter the laying of drains be under the direction of an inspector.

CATCH-BASINS.

Ten catch-basins were constructed during the year; these were built at an average cost of \$57.80. During the spring months quite a number of the North River flags used as a cap-stone for catch-

basins located under the sidewalk, were found to be cracked by the action of the frost; these were removed and replaced with substantial granite cap-stones. In the construction of the new catch-basins during the year granite caps have been used.

A large number of old catch-basins have been partially rebuilt. Thirty old and decayed wooden covers were replaced by twenty-six cast-iron covers and four new oak covers. Twelve hundred and twelve loads of deposit were removed from the catch-basins, at a cost of fifty-eight and one half cents per load.

DEFECTIVE SEWERS.

A portion of the sewer on Medford Street, between Somerville Avenue and Jackson Street, was rebuilt and the grade properly adjusted. The old sewer was found to be in bad condition, being about one half full of deposit and badly out of shape. As the material supporting the sewer at the spring line of the arch was found to be muck, the reconstructed portion was built with a double ring of brick.

The sewer on Cedar Street, between Summer and Hall Streets, was reconstructed at a proper grade; the old sewer was about two thirds full of sand and gravel.

SIDEWALKS.

The following table will show the sidewalk improvements during the year: —

Street.	Side.	From	To	Materials.	Approx. length of walk.	Cost.
Beacon . .	Southwesterly	Cambridge Line .	Northwesterly.	Brick . . .	482.0	\$375 66
Cedar . .	Southeasterly.	Summer	Highland Ave.	Brick and edgestone.	687.5	752 72
Central . .	Southeasterly.	Summer	Somerville Av.	Brick . . .	1044.0	429 51
Columbus Ave. . .	Northeasterly	Warren Ave. . .	Bonner Ave..	Brick and edgestone.	670.0	802 46
Florence .	Both	Pearl	Washington .	Brick and edgestone.	1656.5	1503 96
Franklin .	Northwesterly	Flint	Washington .	Brick and edgestone.	865.0	979 20
Grand View Ave. . .	Both	Walnut	Vinal Ave. .	Gravel and edgestone.	1080.0	686 52
Total . . .	. . . . .	. . . . .	. . . . .	. . . . .	62485.0	\$5529 03

The city has assessed one half of the cost of the above-named sidewalks on the abutters.

SURVEY OF STREETS.

But little has been accomplished in surveying streets, the appropriation for this department not being sufficient. A few notes have been plotted on the large maps referred to in my last annual report. There are many streets where encroachments exist which should be determined, and the street lines properly recorded.

BRIDGES.

The old wooden bridge on Medford Street over the Boston and Lowell Railroad has been removed. New abutment walls are now being constructed, on which it is proposed to place a new iron bridge fifty feet in width, corresponding with the lines of the street.

The bridges over the Boston and Lowell Railroad at School and Cedar Streets, and at Broadway, should be rebuilt, and made to conform to the lines of the street.

STREET NUMBERING.

One street has been numbered during the year. Plans for numbering several other streets are now nearly complete.

WATER WORKS.

Lines and grades have been given for laying water mains; the service pipes laid during the year have been located and properly recorded.

The old water mains on Mt. Pleasant Street, Oakland Avenue, and on Franklin Street, from Broadway to Pearl Street, have been replaced by new mains.

HEALTH.

A map of the city was prepared by order of the Board of Health, showing the location of sewers, dangerous diseases, etc., which was published in the annual report for 1878.

ENGINEERING EXPENSES FOR 1879.

Salary of city engineer, including maintenance of team,	\$1,900 00
Salaries of assistants,	1,099 32
Repairing instruments, stationery, spikes, tools, etc.	160 61
	<hr/>
	\$3,159 93
	<hr/>

Respectfully submitted,

GEO. A. KIMBALL.

REPORT

OF THE

COMMITTEE ON SEWERS.

1879.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Jan. 3, 1880.

Accepted and referred to the next city government, to be printed with the City Reports for the year 1879, and sent down for concurrence.

Accepted and sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, Jan. 3, 1880.

Accepted and referred to the next city government to be printed with the city reports for the year 1879, in concurrence.

DOUGLAS FRAZAR, *Clerk.*

SOMERVILLE, Dec. 31, 1879.

To the Committee on Sewers:

I submit the following statement in relation to sewers built during the year 1879.

GEO. A. KIMBALL,

City Engineer.

SEWERS BUILT IN 1879.

Street.	From	To	Materials.	Size in inches.	Manholes.	Inlets.	Length.	Total cost.	Assessment.	Cost to city.
Broadway	near Sargent Ave.	near Temple St.	Brick	18	1	24	296.0	\$468 05	\$354 24	\$113 81
Broadway Place	Broadway	Southwesterly	Akron pipe	12	1	11	139.5	205 60	. . . . .	205 60
Canal	Creek	Passageway	Brick	24	2	14	197.5	1,021 75	766 55	255 20
Tenney Court and private lands	Canal St.	near Mystic Ave.	Akron pipe	12	3	47	576.0			
Cedar	near Hall St.	Northeasterly	Brick	20	9	19	105.0			
Cedar	end of brick sewer	Highland Avenue	Akron pipe	12	2	19	272.7	944 84	714 78	230 06
Highland Avenue	Cedar St.	Southwesterly	Brick	30	2	30	330.0			
Central	Medford St.	near Broadway	Akron pipe	12	6	61	843.5	829 15	617 64	211 51
Chandler	Park Ave.	near end	"	12	2	28	371.0	390 49	294 87	95 62
Claremont	Mead St.	Holland St.	"	12	3	48	529.0	844 25	584 40	259 85
Dane Court	Dane St.	near end	Brick	24 X 17	3	48	538.5	491 64	381 49	110 15
Dover	Elm St.	near Orchard St.	"	24 X 17	3	55	695.0	595 70	463 86	131 84
Frost Avenue	Dane St.	Angle	"	24 X 17	2	24	299.5	503 33	377 94	125 39
Frost Avenue	Angle	near Somerville Ave.	Akron pipe	12	1	16	215.0			
George	Broadway	Angle	"	12	2	20	293.5	265 75	202 62	63 13
Hamlet	Highland Ave.	near end	"	12	3	33	461.0	422 06	325 57	96 49
Holland	Irving St.	Culvert	Brick	36	2	41	493.5			
Holland	Culvert	Elmwood St.	"	30	1	25	353.0			
Elmwood and pri- vate lands	Holland St.	Cameron Avenue	"	28	2	31	495.5	7,094 16	1,711 06	5,383 10
Mead	Cameron Ave.	Moore St.	"	33 X 22	2	28	492.3			
Mead Street and passageway	Moore St.	Newbury St.	"	30 X 20	1	11	236.7			
Ivaloo	Beacon St.	Park St.	"	28 X 24	3	41	751.1	2,482 15	1,281 99	1,200 16
Park	Ivaloo St.	Somerville Avenue	"	28 X 24	3	53	750.0			
Joy	Poplar St.	Northerly	Akron pipe	12	4	48	620.0	578 92	449 46	129 46
Medford	Central St.	Adams St.	Brick	18	1	26	313.8	1,209 93	933 18	276 75
Adams	Medford St.	near Broadway	Akron pipe	12	3	46	660.1			
Moore	Mead St.	Northeasterly	"	12	1	31	320.0	375 17	330 59	44 58
Morrison	end of old sewer	Elm St.	Brick	24 X 17	1	4	58.0			
Elm	Morrison St.	Northeasterly	"	24 X 17	1	9	100.0	167 52	126 00	41 52

Newbury	Passageway	Holland St.	Akron pipe	12	4	72	802.0	1,848 75	1,026 39	822 36
Park Ave	Wallace St.	near Elm St.	Brick	24 X 17	2	37	435.0	424 84	320 63	104 21
Walnut	Mills St.	near Veazie St.	Akron pipe	12	2	35	454.7	556 84	421 02	135 82
Walnut	near Broadway	Mills St.	Brick	18	2	40	446.3	1,759 57	1,033 60	725 97
Mills	Walnut St.	near Sargent Ave.	Akron pipe	12	2	30	468.5			
Washington	Beacon St.	Line St.	Brick	24	1	13	232.0	1,094 88	731 25	363 63
Line	Washington St.	near Cooney St.	Akron pipe	12	4	71	1,056.5			
Total amount of sewers built							15,691.7	\$24,575 34	\$13,449 13	\$11,126 21

RECONSTRUCTED.

Broadway	Sargent Ave.	Northwesterly	Brick	18	1	15	171.4	\$434 94	. . . . .	\$434 94
Cedar	Summer St.	near Hall St.	"	20	2	32	320.0	441 91	. . . . .	451 91
Dane	Fitchburg R. R.	Frost Ave.	"	28 X 24	2	19	313.0	523 15	. . . . .	523 15
Medford	Somerville Ave.	Northerly	"	30	. .	13	311.7	828 80	. . . . .	828 80
Waverly	end of brick sewer	Southerly	Plank	36 X 30	. .	. . . . .	159.0	285 70	. . . . .	285 70
Total amount of sewers rebuilt							1,275.1	\$2,524 50	. . . . .	\$2,524 50
Total amount of sewers built and rebuilt							16,966.8	\$27,099 84	\$13,449 13	\$13,650 71

CITY OF SOMERVILLE.

IN COMMITTEE ON SEWERS, Jan. 3, 1880.

To His Honor the Mayor and the Board of Aldermen :

Your Committee on Sewers have reported upon all matters referred to them during the past year, and present the following statement of the appropriation for sewers and the expenditures therefrom.

Appropriation for sewers,	\$7,500 00	
Transferred July 1, from balance of		
1878,	5,600 00	
Value of materials on hand Jan. 1,	212 74	
Total,		\$13,312 74

EXPENDED.

For 24 sewers, as per accompanying table,	\$24,575 34	
Less assessments,	13,449 13	
Cost to the city,	\$11,126 21	
For reconstructing 5 sewers as per table,	2,524 50	
" 10 catch-basins (average \$57.80),	578 06	
" catch-basin on land of Hill & Buffum, Elmwood Street,	11 60	
" clearing mouths of catch-basins,	168 80	
" cleaning "	708 51	
" repairing "	590 37	
" examining "	3 50	
" repairing sewers and drains,	13 83	
" flushing sewers,	49 50	
" examining "	14 63	
" cleaning "	134 69	
Amount carried forward,	\$15,924 20	

<i>Amount brought forward,</i>	\$15,924 20	
For repairing manholes,	8 25	
“ cleaning manhole dirt-catchers,	231 25	
“ raising tops of manholes to new grades,	17 50	
“ cleaning ditches,	11 00	
“ connecting culvert with sewer at Union Square,	9 00	
“ moving water pipe, Line Street,	28 60	
“ advertising hearing for sewer in Greenville Street,	5 00	
“ tools and personal property,	83 79	
“ repairing same,	15 66	
“ arranging same,	12 00	
“ books and stationery,	34 50	
“ materials damaged,	10 66	
“ “ on hand, Dec. 31,	219 17	
“ abatement of assessments of 1878,	47 53	
“ sundry small items,	16 60	
		<hr/>
Total,		\$16,674 71
Excess of expenditures over appropriation,		<hr/> \$3,361 97 <hr/>
For the Committee,		

A. R. COOLIDGE, *Chairman.*

FINAL REPORT

OF THE

COMMITTEE ON HIGHWAYS,

FOR THE

YEAR 1879.

CITY OF SOMERVILLE.

IN BOARD OF ALDERMEN, Jan. 3, 1880.

Report accepted and referred to the next city government, to be printed with the City Reports for the year 1879, and sent down for concurrence.

CHARLES E. GILMAN, *City Clerk*.

IN COMMON COUNCIL, Jan. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk*.

CITY OF SOMERVILLE.

IN COMMITTEE ON HIGHWAYS, Dec. 30, 1879.

To the City Council:

The Committee on Highways respectfully submit this their annual report, showing briefly the doings for the year 1879.

The expense to this department occasioned by the elements has been comparatively small. The highways have not suffered materially from the effects of rain, and the snow-storms have not been severe; for all of which your committee have reason to be exceedingly grateful. The cost of removing ice and snow for the year has been only \$404.70.

Linden Avenue, running from Elm Street to Summer Street, and Gilman Street, running from Cross Street northwesterly a distance of five hundred and fifty-four feet, heretofore unaccepted streets, have been laid out and accepted under the Betterment Act, as highways of the city. The former was in such good condition that it has not required any expenditure of money. The abutters having released the city from all claims for damages, no assessments have been levied for betterments occasioned by said laying out. The laying out of Gilman Street required the taking of a small strip of land from the heirs of John Runey, amounting in area to about four hundred feet. Your committee have arranged a settlement for the damages to this estate, on the basis of twenty-five cents per foot for the land taken. The betterments to be assessed to the abutters hereafter will be simply to cover the cost of this expenditure, together with the expense of the necessary advertising.

A Resolve and Order have also been adopted by the City Council for the laying out, grading, and acceptance by the city of the extension of Columbus Avenue, through the Bonner estate, on their petition: your committee have delayed operations upon this street, on account of a petition having been presented to the City Council for the laying out and grading of the other end of the avenue through the Sanborn estate, known popularly as Probation Park.

If the latter petition had passed and had received the favorable action of the City Council, both ends of the avenue could have been graded at the same time at a much less expense to the city and also to the abutters, than if your committee were required to undertake each job at separate times, as the necessary excavating of the Bonner estate would provide material for the required filling in of the Sanborn estate.

Broadway, from Willow Bridge to Curtis Street, has been in a bad condition for many years; during the spring months, when the frost is leaving the ground, it has been absolutely impassable for heavy teams. Your committee have caused this important thoroughfare to be put in excellent condition. For more than a mile in length, it has been thoroughly macadamized; the low places brought up to grade; the fences and stone walls that encroached upon the street moved back to the proper lines; the corners of Elm Street, Broadway, and College Avenue rounded to give them a more graceful appearance; sidewalks built where none before existed; and the whole driveway, for its entire length, carefully gravelled, graded, and rolled, rendering it one of the most beautiful driveways within the city limits. This, in connection with the improvements made last year, and the widening of the bridge over the Lowell Railroad, which may be looked for within a short time, complete the improvements on this thoroughfare from Boston to the Arlington line.

Highland Avenue, from Central Street to Cedar Street, having become rough and worn out, large bowlders protruding through the surface of the roadway, and the gravel ground to mud and dust, your committee availed themselves of the opportunity afforded by the discovery of an excellent quality of gravel coming out of the Ivaloo Street sewer, to set to work a small gang of men on the avenue to break up the exposed stones, and cover the same with the gravel taken from the above-mentioned sewer.

The expense of repairing this avenue was therefore trifling, as it included simply the carting of the material and the labor employed upon it.

The following schedule will show more particularly and in detail the streets graded and repaired during the year 1879:—

STREETS GRADED, REPAIRED, ETC.

NAME.	FROM	To	
Broadway....	Willow Bridge	Curtis.....	5,280 feet graded, mac'd and gravelled.
Highland Av.	Central	Cedar	2,000 feet gravelled.
Florence	Pearl	Washington	800 feet macadamized and gravelled.
Franklin.....	Flint	"	800 feet gravelled.
Cedar	Highland Av.	Hall	500 feet macadamized and gravelled.
Albion.....	Central .....	.....	600 feet graded and gravelled.
Broadway ...	Boston Line ..	Cutter	1,600 feet macadamized and gravelled.
Columbus Av.	.....	.....	300 " " " "
Boston .....	.....	.....	300 feet graded.
Moore .....	.....	.....	400 " "
Claremont...	.....	.....	500 " "
Newbury ....	.....	.....	800 " "

There has been expended, of the sidewalk appropriation for the year, the sum of \$5,529.03 for the construction of sidewalks, as shown in the following schedule, one half of this amount being assessed to the abutters: —

SIDEWALKS CONSTRUCTED.

NAME.	SIDE.	FROM	To	Feet of edgestone.	Yds. of brick.
Central	South	Summer	Somerville Av.	31	517.52
Cedar	S. E.	Summer	Highland Ave.	665.55	442.62
Columbus Ave. ..	N. E.	Bonner Ave....	Warren Ave. ..	669.55	419.35
Florence	Both	Pearl	Washington ..	887.55	1,126.20
Frauklin	West	Flint	"	815.15	526.70
Beacon .....	.....	Cambridge Line	Wyatt's Block	.....	488.97
Grand View Ave.	Both	Walnut	Vinal Ave. ...	1,122	.....
Total				4,190.80	3,521.36
Repairs, etc.....				624.35	445.43
Grand Total... ..				5,815.15	3,966.79

In addition to the above, sidewalks have been constructed for which the abutters have furnished the material at their own expense, the city contributing only the labor as its part of the construction, viz.: —

NAME.	STREET.	Yds. of brick.	Feet of edgestones.	Yds. of paving.
E. R. Warren....	Washington	75	56	12
J. C. Dalton	Florence	82		
M. Durant	Washington	33		
Geo. A. Bruce ...	Highland Ave...	75		
George Skilton ..	Walnut	46	65	
M. G. Kenney....	Oliver	44		
L. M. Maynard ..	Highland Ave...	40		
E. A. Kingman..	“ “	54		
N. Tufts, Jr.....	Medford		95.50	
Asa Durgin	Broadway.....		30	

Ten additional street crossings have been constructed, and numerous old ones repaired and relaid. 1,200 yards of paved gutters have been taken up and relaid, 2,300 feet of edgestones reset, 300 yards of brick sidewalks reconstructed, and three stone and five wooden culverts built, all as more particularly set forth in the succeeding schedule.

A very needful and important element for the proper construction of the above-mentioned work is the article of gravel. It is the misfortune of the city to be so situated that a desirable quality is obtained with considerable difficulty and expense. Our natural soil is composed mostly of clay, and it is both useless and extravagant to purchase or use an article of a loamy or binding tendency, even if it can be obtained at a very low price. The labor upon a poor quality of gravel is double that required to be expended upon a good article, inasmuch as it grinds into mud and dust, and invariably has to be scraped off in a very short time, and a good article substituted therefor. As an illustration, your committee submit the following facts for the information of the City Council.

The gravel used on Broadway, from the Boston line to Franklin Street, in the spring of 1877, was what is known as the Everett gravel. It proved to be of an inferior quality, and wholly unsuited for the purpose for which it was purchased. Within the space of six months it was nothing but dust in dry weather, and porridge in

wet weather. Shortly after being exposed to the air it slacked like lime and lost its virtue. It became necessary to scrape it off, and gravel from Belmont was substituted with a much better result.

A small quantity of Everett gravel was purchased this year for use upon the northerly side of Broadway, simply because it was offered cheap; but it proved to be poor economy, as it became necessary to top-dress it with a more desirable and better article.

In the construction of Broadway above Willow Bridge, gravel was used which was purchased of Mrs. Rich at twelve and one half cents per load in the pit. It being a very short haul, it probably did not cost more than fifty-five cents per load on the work; and by carting it ourselves, we could select the best quality to be found there; and your committee were of the opinion that quite a saving would be made through its purchase. The result was, however, that the gravel placed upon one end was ground out before the spreading at the other end had even been completed; and to save it, in this case also, it was found necessary to give it a thorough coating of Belmont gravel.

Washington Street, from the Fitchburg Railroad to the Cambridge line, was graded and gravelled early in the year 1878. In this case gravel from Belmont was used. As soon as the road was completed, it was subjected to severe and increased usage. It is the best road in Somerville to-day, and not one dollar has been spent upon it for gravel since that time.

It is well, perhaps, for your committee to state why they have given the Belmont gravel preference over all others. It is not simply because it came from Belmont, for a much inferior article to that which can be obtained in our own city was found in the same hill, as shown by the purchase made by the city of Cambridge for use on the upper end of North Avenue; but because two years ago your committee found a vein of gravel at Belmont, which proved to be of a very superior quality, and more suited to the peculiarities of our roads than any gravel which had heretofore been obtained. It is of a clean, sharp, granite nature, entirely free from loam, clay, or any binding substance; subjected to the pressure of the hand, it separates like a handful of shot. The vein is almost exhausted now, and our successors will be obliged to look farther for as good an article.

By the use of a coating of hard-pan directly upon the well-rolled macadam, to bind and cement the stones together in one common

mass, and with the liberal use of the roller afterwards, your committee have learned from experience that a thin coating of good gravel is cheaper, better, and more satisfactory than the application of it several inches in thickness directly upon the stones.

In the estimation of your committee, the gravel purchased at Belmont has proved more economical to the city than that purchased elsewhere; that which was selected was cheap at the price paid for it. Another quality that can be found in the same hill, and which your committee have rejected, would be dear at half the price paid for the selected.

The entire purchase of gravel by your committee during the year is as follows:—

GRAVEL PURCHASED 1879.

Mrs. A. L. Rich, 938 loads at \$0.12,	\$112 56
“ “ 536 “ .13,	69 68
C. L. Heywood, 120 loads at .45,	54 00
“ “ 243 “ .16,	38 88
“ “ 1491 “ .80,	1,192 80
Mrs. A. O'Brien, 77 $\frac{1}{4}$ yards at .55,	42 48
	<hr/>
	\$1,510 40

Whilst your committee have been able to utilize much of the material taken from the sewers in the course of construction during the year, still the duty of following the Committee on Sewers, reinforced as they were with an additional appropriation of \$5,600, for the purpose of cleaning up and carting off the débris occasioned by the building of about three miles of sewers, has been attended with no inconsiderable expense, and has proved to be a severe drain upon the appropriation of this committee.

If the construction of sewers had commenced at an earlier date in the spring and terminated as early in the fall as the work on highways ceased, much saving would have been made, and a balance shown to the credit of the appropriation for highways, instead of otherwise; but carrying the construction of them so late into the fall and winter months obliged your committee to keep in their employ a force of men for the sole purpose of cleaning up and carting away material, which, owing to the lateness of the season, they had no use for.

The following schedules are presented, showing additional items of interest not hereinbefore enumerated : —

STREET SIGNS ERECTED.

Pinckney Street,	Bond Street,
Florence Street,	Medford Street,
Myrtle Street,	Marshall Street,
Union Street,	School Street,
Webster Street,	Albion Street,
Maple Avenue,	Gilman Stree .

DANGER SIGNS.

Newbury, Moore, Claremont, and Cameron Streets.

STREET CROSSINGS CONSTRUCTED.

ELM STREET, at Cherry Street.
 OLIVER STREET, at Franklin Street.
 CEDAR STREET, at Summer Street.
 SUMMER STREET, at Cedar Street.
 PERKINS STREET, at Lincoln Street.
 WEBSTER AVENUE, at Glass House.
 COLUMBUS AVENUE, at Warren Avenue.

STREET CROSSINGS RECONSTRUCTED.

HIGHLAND AVENUE, at Medford Street.
 FLORENCE STREET, at Pearl Street.
 FLORENCE STREET, at Washington Street.

CULVERTS (WOODEN).

Broadway, 3; Cedar Street, 1; Willow Avenue, 1; Ivaloo Street, 1.

CULVERTS (STONE).

Broadway, 3.

Gutters repaved, 1,200 yards; edgestones reset, 2,300 feet; brick sidewalks repaved, 300 yards; number of loads of ashes collected, 3,999.

TREES, ETC.

Permits for setting out trees,	30
Number of trees on highways,	3,285
“ “ “ grounds around school-houses,	80
“ “ “ Central Hill,	197
“ “ “ Public Park,	377
Permits for hitching posts,	7
Total number of public trees,	<u>3,939</u>

AMOUNTS CHARGED TO DIFFERENT DEPARTMENTS FOR
LABOR PERFORMED, OR MATERIALS SUPPLIED.

Sewer Department,	\$2 50
Health Department,	993 95
Public Property Department,	15 05
Fire Department,	9 63
Sidewalks Department,	54 00
Somerville M. Water Works,	20 15
Total,	<u>\$1,095 28</u>

BILLS DELIVERED TO CITY TREASURER FOR COLLECTION.

Arthur Moland, rent of house,	\$65 00
E. L. Grant, rent of house,	72 00
R. Falvey, 40 perch stone, at \$0.75, 40 loads of sand at \$0.20,	38 00
G. W. Prichard, 14 loads stone at \$0.50, 2 loads of sand at \$0.20,	7 40
	<u>\$182 40</u>

CASH RECEIVED AND PAID TO CITY TREASURER.

Mrs. M. Wickliff, constructing driveway,	\$14 25
John S. Nason, old cart,	12 00
R. A. Vinal, 1 load of gravel,	90
J. Foster, 400 bricks,	3 80
F. P. Ladd, constructing driveway,	7 20
G. L. Baxter, 1 load of sand,	80
<i>Amount carried forward,</i>	<u>\$38 95</u>

<i>Amount brought forward,</i>	\$38 95
E. C. Comee, 6 loads filling,	1 50
J. Foster, teaming,	2 00
W. Pollard, 1 load of gravel,	80
R. L. Spear, sand,	60
A. M. Libbey, cobble stones,	1 25
J. N. Clark, constructing driveway,	4 60
C. Smith, " "	6 30
S. D. Sawin, bricks for sidewalk,	9 25
J. Bowker, rent of land at Waltham,	80 00
Total,	<u>\$145 25</u>

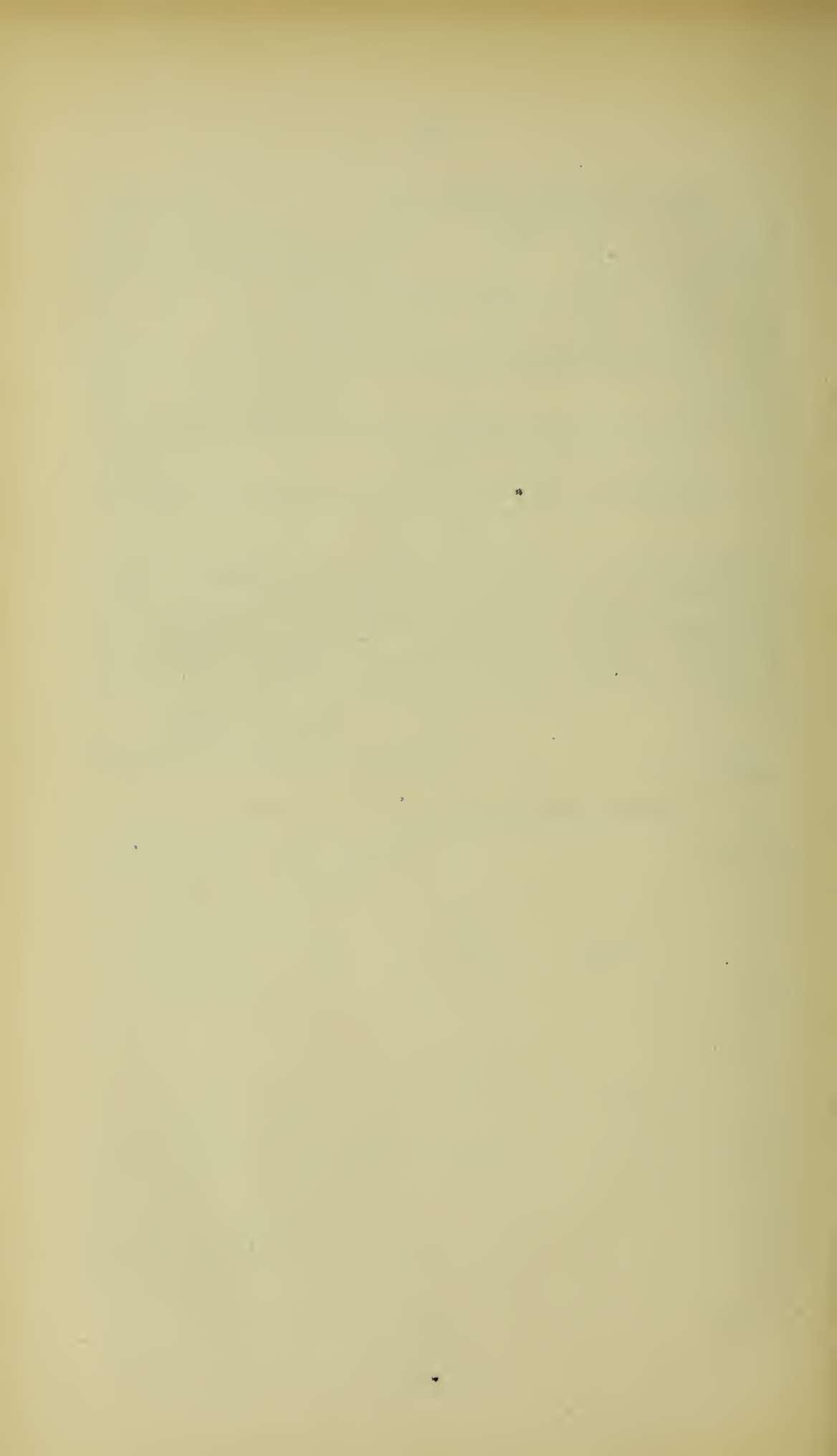
The committee, in closing the duties for the year, desire to express their sincere and hearty appreciation of the services of the Superintendent of Streets, and of the clerk of the committee, for the faithful, efficient, and very satisfactory manner in which they have performed their respective duties.

JNO. F. COLE,

Chairman Committee on Highways.

Attest:

DOUGLAS FRAZAR, *Clerk.*



ANNUAL REPORT

OF THE

TRUSTEES OF THE PUBLIC LIBRARY.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Feb. 17, 1880.

Referred to the Committee on Printing, with instructions to print the same in the Annual Reports.

CHARLES E. GILMAN, *Clerk*.

IN COMMON COUNCIL, Feb. 18, 1880.

Concurred in.

GEO. I. VINCENT, *Clerk pro tem*.

THE FREE PUBLIC LIBRARY.

SEVENTH ANNUAL REPORT.

GENTLEMEN OF THE CITY COUNCIL, — In submitting to you our Seventh Annual Report, we must confess to some degree of disappointment. One year ago it was our hope that at this time it would be our privilege to report the library in the enjoyment of suitable apartments, and of facilities more commensurate to the importance of the interests which it subserves. We believed it would not again be necessary to return to a complaint which had been echoed on every side, and which, it is hardly too much to say, had become a reproach to the good name of the city of Somerville. Unhappily, however, we now find ourselves obliged to represent a condition of affairs even more serious than that set forth in our last report, and again so ably in the address of his Honor the Mayor. The demands upon the library have steadily increased, its field of usefulness has widened, its capacities as a public educator are more unquestioned, its power to promote good citizenship is everywhere more marked, — and yet it is compelled to struggle on in a single, contracted, ill-ventilated, overcrowded room, without such conveniences as an ordinary town library may boast! Every year, as you must see, the need of separate reading, reference, and delivery rooms becomes more imperative. Whoever is at all familiar with the unwholesome air, the overcrowding, and necessary confusion, incident to the present accommodations, must wonder at the spectacle of so many submitting themselves to such discomforts and annoyances. The institution that can prosper in any measure under such discouragements, must indeed have a vital hold upon the interests and affections of the people. It is not at all hazardous to predict that with suitable accommodations the service of the library would be quickly doubled; and we respectfully submit that there is no subject that can at present more worthily engage your attention than the relief of the public library.

We were further disappointed in our attempt to secure a special appropriation to defray the expenses of a new catalogue. We were therefore obliged, such a catalogue having become a necessity, to provide for it out of our general appropriation. As a consequence, we have had only seven hundred dollars to expend for books and periodicals, — an amount quite inadequate to meet the normal demand. .

In this new catalogue, however, we have matter for congratulation. It is full, tasteful in appearance, as systematic and complete as our resources would permit, and must add greatly to the efficiency of the library and the convenience of readers. We are also able to congratulate you again upon unmistakable signs of a growing interest and appreciation of the library on the part of the public. Pursuant to a policy announced in former reports, we have sought the co-operation of the leading educational forces in the community, and are happy to acknowledge in many instances a cordial response. In particular are we indebted to teachers in the public schools for expressions of interest and valuable suggestions.

At the beginning of the year, Miss H. A. Adams was re-elected librarian, and Miss Lizzie Stevens assistant librarian, — the former at a salary of \$700, the latter \$350. It appears from the annual report of the librarian that the whole number of books now in the library is 7,814. During the year 64,022 books have been given out, and as many as 570 in a single day. Only two books have failed to be recovered. Some 1,150 new names have been added to the list of borrowers. The reading-table has been supplied to the extent of its capacity with newspapers and current periodicals, and there seems to be no diminution in the interest it has commanded.

The financial statement for the year 1879 is as follows: —

Credit balance from 1878,	\$478 06
Appropriation from the City Council,	1,200 00
Amount of dog-license money,	936 10
Received for fines and catalogues,	260 20
	<hr/>
	\$2,874 36
	<hr/>

Expended for salaries,	\$1,336 98
“ “ books,	735 29
“ “ printing catalogues,	522 85
“ “ “ cards, etc.	193 00
“ “ expressing,	28 85
“ “ insurance,	18 75
	<hr/>
	\$2,835 72
	<hr/>

Balance to new account, \$38.64.

Respectfully submitted,

W. G. TOUSEY, *President.*

For the Board of Trustees.

ANNUAL REPORT

OF THE

OVERSEERS OF THE POOR,

FOR THE

Year Ending Dec. 31, 1879.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Feb. 3, 1880.

Report accepted, and referred to the Committee on Printing, to be printed with the City Reports for the year 1879, and sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, Feb. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk.*

CITY OF SOMERVILLE.

To his Honor the Mayor and the City Council :

GENTLEMEN, — The Board of Overseers of the Poor, in as brief a manner as seems to them consistent with the importance of the subject, herewith present their annual report.

Very little can be said in regard to this department, which has not already been thoroughly stated by previous boards. “The poor ye have always with you.” said the writer of old, and Somerville and its Board of Overseers are weekly reminded of this fact. The usual demand has been made on the city’s charities, and been met with an economical and still a liberal expenditure of the monies intrusted to our care.

By a law passed by the Legislature of 1879 and now in operation, any woman who has resided in any city or town of this Commonwealth any five years, either with or without a husband, and has not called for aid or committed any crime against the laws of the Commonwealth, gains a settlement. By this law, this and other cities and larger towns, where the poor are apt to locate, become to a great extent sufferers in pocket, and we are getting our share already. We have in the matter of insane persons some four or five cases thrown on our hands. The same may be said in regard to the cases of out-door aid ; and many that were partially aided by the State, under the law of 1877, and to some extent by the city, have now become settled paupers, and will now and in the future increase the expenses of this department. In this connection we will remark that the cities of Boston, Cambridge, and Gloucester are about to test the constitutionality of this law, on the ground that a person cannot gain a settlement in two ways at the same time, as you will see that a married woman can by this law, — that is, by her husband, and also by her own right. In the mean time these applicants have to be attended to and aided. Your honorable body can see at a glance that by this law, the labor in ascertaining these settlements is greatly increased, and a very careful

study of the cases required. All the notices sent by us to the State Board of Health, Lunacy, and Charity, under the law of 1877, are returned to us with this clause added, whether the aid is granted or not, "will be allowed if no settlement"; thus throwing the labor of ascertaining settlements on the cities and towns.

We respectfully call your attention particularly to the need of some place of refuge for the poor of all conditions, and also a place of burial. A small almshouse, with some twenty-five or thirty acres of land, would be a means of greatly reducing the expenses of this department in many ways. By Table 2 it will be seen that in this year the sum of \$966.94 has been expended for rents, and \$719.98 for board; and in addition to this, there has been granted in orders to those in rented houses the sum of \$1,271.70, making a total sum of \$2,958.62: and to a much larger extent, from the fact of having such a place to refer applicants to. The need of this must be plain to all who have the interest of our rapidly growing city at heart.

By Table No. 1, below, we give you some of the statistics of the operations of this department, as made up by our secretary. The table will explain itself.

By Table No. 2 (secretary's report), you will see that our gross receipts, including appropriation, were \$17,676.64; it also gives the monthly expenditures, and also the items of the same, amounting to \$17,643.90: leaving a balance in the treasury of \$32.74.

By Table No. 3, you will see the statement of the storekeeper, showing that the store has been more than self-sustaining, giving a net gain to the city of \$756.12, and also giving the applicant for aid a full quantum for his or her order in first-class goods at the lowest cost.

The matter of fuel for the poor, as will be seen, is a large item in the expenditures; but we think, as managed by this Board, a great saving is made to the city. The fuel is purchased in large quantities at wholesale price; the saving in sawing and splitting wood, which is now done by tramps and the poor, aided by the city, is at least \$300 per year: and under this management the poor get the full quantity given.

We would call your attention to the rooms occupied by this Board, — very excellent in accommodations, but lacking in heating apparatus; on cold or damp days, it is almost impossible to remain, as we are obliged to do, from four to six hours sitting at our tables, without danger to health. We think the fault is in

the arrangement of the apparatus, and the peculiar situation, in the northeast corner of the building and quite distant from the boiler.

TABLE NO. 1, STATISTICS.

Total number of families aided by city, towns, and State,	366
Total number of persons aided by city, towns, and State,	1,324
Total number of orders given : —	
“ for fuel,	1,588
“ “ groceries,	3,987
“ “ dry goods, boots and shoes, etc.	732
	6,307
Total number of burials,	29
“ “ persons boarded in families,	14
“ “ “ “ public institutions,	23
Total number of families aided, chargeable to city,	163
Total number of families aided, chargeable to other towns and cities,	48
Total number of families without settlement, aided by city,	155
Total number of families partially aided by State, included in above,	115
Total number of families aided by other towns and cities, chargeable to city,	42
Whole number of families registered,	631
Number added during the year,	39

TABLE NO. 2. — RECEIPTS AND EXPENDITURES.

Dr.		Cr.	
To appropriation	\$13,000 00	By pay-roll to Jan. 31	\$3,515 45
" cash from Draught	81 82	" Feb. 28	2,025 58
Boston	541 93	" March 31	2,442 25
Lawrence	68 25	" April 30	1,617 13
Nantucket	32 63	" May 31	549 12
Chelsea	39 83	" June 30	676 89
Melrose	39 10	" July 31	1,838 33
Abington	48 44	" Aug. 31	551 80
Woburn	40 30	" Sept. 30	1,192 75
Truro	3 80	" Oct. 31	1,031 29
Oakham	6 20	" Nov. 30	971 56
Cambridge	116 23	" Dec. 31	1,231 75
State of Massachusetts	2,227 13		
Boston	610 18		
Cambridge	80 10		
Lawrence	89 15	House rents	\$966 94
Nantucket	24 35	Board in families	719 98
Chelsea	21 80	Burials	535 25
Salem	16 05	Dry goods, boots and shoes and clothing ...	1,382 02
Natick	20 40	Fuel	3,057 58
Melrose	42 05	Groceries	4,945 46
Milford	3 00	Lodgers	9 00
Abington	189 10	State institutions	2,708 00
Woburn	62 40	Towns and cities	1,595 45
Truro	21 50	Sundries	167 92
Bridgewater	51 50	Stationery, etc	56 30
Oakham	28 40	Salaries	1,500 00
Medford	22 95		17,643 90
Dedham	33 40		
Melrose	25 15		
Nantucket	16 20		
Bridgewater	61 30	Balance to Cr.	32 74
Abington	12 00	Board	
			\$17,676 64

TABLE NO. 3, STOREKEEPER'S REPORT.

	DECEMBER 31, 1879.	
Stock on hand Jan. 1. 1879,	\$112	29
Amount of goods bought for account store,	4,624	35
	<hr/>	
		\$4,736 64
Goods delivered on orders from overseers		
from Jan. 1, 1879, to date,	\$5,485	37
Goods delivered to police station for tramps,	189	93
Amount stock on hand in city store,	134	96
	<hr/>	
		5,810 26
	<hr/>	
		\$1,073 62
Expenses of store: —		
Storekeeper's salary,	\$300	00
Insurance on building,	17	50
	<hr/>	
		317 50
	<hr/>	
		\$756 12
	<hr/>	
	<hr/>	

Gentlemen, in closing this brief report, we wish to thank your body for the appropriation made in aid of this department, and also to thank the several charitable associations of this city for the very general assistance in the care of the poor, and to give them a word of caution. There are many applicants for aid who do not come under what may be called "worthy and well qualified," and would say to them, that we have at our office the registered history of six hundred and thirty-four families, who are receiving or have received aid, and these histories will be freely given to any members of these associations.

We shall soon again call on you for an appropriation for the present year, with the full confidence that in your kindly feelings for the class we represent, it will be full and ample.

ANSEL LEWIS,
FRANK G. WILLIAMS,
N. HOWE,

Overseers of the Poor.



SECOND ANNUAL REPORT

OF THE

BOARD OF HEALTH

OF THE

CITY OF SOMERVILLE,

FOR THE

YEAR 1879.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Feb. 3, 1880.

Referred to the Committee on Printing, with instructions to print the same in the Annual Report for 1880. Sent down for concurrence.

CHARLES E. GILMAN, *Clerk*.

IN COMMON COUNCIL, Feb. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk*.

CITY OF SOMERVILLE.

OFFICE OF THE BOARD OF HEALTH,
CITY HALL, SOMERVILLE, MASS., Jan. 28, 1880.

To the Honorable the Mayor and the City Council of the City of Somerville :

GENTLEMEN, — In compliance with the provisions of Chap. 133 of the Acts of the Legislature of 1877, we present the following report for the year 1879 : it being the second annual report of this Board.

MEMBERSHIP.

On the first of January the board consisted of Messrs. Charles W. Sawyer, chairman, Emory L. White, city physician, and George A. Kimball. Jan. 9, the mayor reappointed George A. Kimball a member of the board for two years, and the appointment was confirmed by the Board of Aldermen. July 1, the mayor appointed, with the approval of the Board of Aldermen, John F. Couch, city physician, and *ex officio* a member of this board, for three years, in accordance with Chap. 21 of the Acts of the Legislature of 1878 : Dr. White retiring.

ORGANIZATION.

Feb. 5 the following officers were re-elected : —

<i>Chairman</i> . . .	CHARLES W. SAWYER,
<i>Clerk</i>	GEORGE I. VINCENT,
<i>Inspector</i> . . .	WILLIAM H. BRINE, 40 Houghton Street.

WORK.

Our work has consisted mainly of abating nuisances, regulating offensive trades, supervising the issuing of licenses to keep swine and goats and to collect grease, the collection of ashes and house offal, and the removal of night soil, and dealing with diseases dangerous

to the public health. We have approved physicians' certificates of deaths, as required by Chap. 174 of the Acts of the Legislature of 1878.

We have also given considerable attention to the impurities in the Mystic water, which were quite noticeable during the summer months.

CONTENTS OF REPORT.

The remainder of this report consists of a detailed statement of the work done, given in order as above named; an item on sewers, and another on house-drainage; a table of mortality in Somerville during the year; a comparison of the rates of mortality, the prevalence of diseases dangerous to the public health, and the number of nuisances abated in the ten sanitary districts of the city; and a statement of expenses.

Appended to this report is a paper on the "prevention of disease," by John F. Couch, M. D., city physician, with the city physician's report.

NUISANCES.

The following is a table of nuisances abated, arranged by the months in which the complaints were made, except that those placed under January include nuisances referred to us by the board of 1878:—

NUISANCES ABATED IN THE YEAR 1879.

	* January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Cellar damp	4	.	.	5	7	6	6	1	.	.	1	.	30
Cesspool defective	2	.	1	1	.	.	.	.	.	.	1	.	5
“ offensive . . . . .	.	.	.	.	.	.	1	1	1	.	.	.	3
“ overflowing	1	.	2	4	1	1	3	.	2	.	.	.	14
“ under house offensive, . . . . .	.	.	.	.	1	.	.	.	1	.	.	.	2
“ under stable offensive, . . . . .	.	.	.	.	1	.	.	.	.	.	.	.	1
Connections of waste with drain-pipes defective	2	6	5	7	4	8	4	3	3	1	1	.	44
Drainage defective	37	3	1	5	3	1	4	.	1	1	.	.	56
“ emptying in cellar . . . . .	.	1	.	.	5	4	1	2	1	.	1	.	15
“ emptying on surface	5	6	2	11	30	10	2	5	13	4	.	.	88
Drain-pipe broken and leaking,	4	2	2	2	1	.	.	2	1	.	.	1	15
“ in cellar defective	3	6	4	.	10	4	5	3	2	1	1	1	40
“ not trapped	1	1	.	.	.	1	.	2	1	5	.	.	11
“ stopped up . . . . .	.	1	.	.	4	2	1	1	.	.	.	.	9
Dwelling-rooms in basement low and damp . . . . .	.	.	.	.	1	.	.	.	.	.	.	.	1
Filth in cellar	1	2	.	2	.	.	.	.	1	.	.	.	6
“ on premises	6	1	.	1	9	.	.	1	1	1	.	.	20
Garbage in street . . . . .	.	.	.	.	.	.	.	.	.	1	.	.	1
Hennery offensive . . . . .	.	.	.	.	.	1	1	.	.	.	.	.	2
Hens kept in cellar . . . . .	.	.	.	1	.	1	2	1	.	.	.	.	5
Horse kept in house . . . . .	.	.	.	.	.	.	.	.	.	1	.	.	1
Manure exposed	1	1	2	8	5	2	2	.	7	2	1	.	31
Manure-pit not properly constructed . . . . .	.	.	.	.	2	.	.	.	.	.	.	.	2
Offal on land . . . . .	.	1	1	.	2	.	.	.	2	.	2	2	10
Offensive materials carted thro' streets . . . . .	.	.	.	.	.	.	.	.	1	.	.	.	1
Offensive odor in and about dwellings	22	3	2	.	3	4	6	3	.	1	.	.	44
Pig-pen offensive	1	.	.	.	.	.	.	.	.	.	.	.	1
Privy not properly constructed	1	.	.	1	2	1	.	.	.	.	.	.	5
Rendering, method of, defective,	1	.	.	.	.	.	.	.	.	.	.	.	1
Slops thrown on surface . . . . .	.	2	1	2	.	2	4	2	1	1	.	1	16
Soil-pipe not ventilated . . . . .	.	3	1	.	.	.	.	.	1	1	.	.	6
Stable filthy . . . . .	.	.	1	.	.	.	.	.	.	.	.	.	1
“ offensive	1	.	1	1	.	.	3	.	.	.	.	.	6
Stagnant water in house cellar	1	2	1	.	5	2	7	2	.	.	.	.	20
“ “ in stable cellar . . . . .	.	1	.	2	.	.	1	.	.	.	.	.	4
“ “ on surface	9	.	.	3	5	2	4	.	.	.	.	.	23
Vault full	14	18	11	6	29	23	44	43	16	19	1	3	227
“ leaking . . . . .	.	.	.	1	4	6	1	.	3	.	.	.	15
“ not properly constructed,	9	4	1	5	7	2	4	.	3	2	1	.	38
“ “ ventilated	11	.	.	1	.	.	.	.	.	.	.	.	12
“ offensive	11	1	2	7	2	6	9	1	2	2	.	.	43
Waste-pipes defective	3	2	3	3	.	.	2	4	.	.	.	.	17
“ not trapped	62	17	10	11	11	15	17	27	13	13	12	1	209
“ stopped up . . . . .	.	3	.	.	.	.	.	3	.	.	.	.	6
Water-closet defective	10	3	1	1	4	2	1	1	4	.	.	1	28
“ insufficiently supplied with water . . . . .	.	3	.	.	.	.	.	.	.	.	.	.	3
Water-closet not supplied with water	3	.	.	.	1	.	.	.	3	.	.	.	7
Water-closet offensive	6	1	.	1	.	4	.	3	.	.	.	.	15
“ stopped up . . . . .	.	.	.	.	.	1	.	.	1	.	.	.	2
Water-course obstructed . . . . .	.	.	5	.	.	.	.	.	.	.	.	.	5
“ polluted . . . . .	.	.	1	.	.	.	.	.	.	.	.	.	1
Wooden waste-pipes and drains,	1	1	3	.	1	3	11	2	1	6	.	.	29
	233	95	64	92	160	114	146	113	86	62	22	10	1197

* Including nuisances referred to us by the Board of 1878.

Number of nuisances abated, 1,197; number referred to Board of 1880, 148; total, 1,345.

Number of complaints, 639; number made without sufficient cause, 6.

Number of tenements ordered vacated, 30; number vacated in compliance with our orders, 8; number caused to be vacated by the Chief of Police, 2; number ordered to be vacated that have been put in proper sanitary condition, 26.

Number of notices issued through the police department and the mails, 819; number served by constables, 49; total, 868.

Number of letters sent, 160.

PRIVIES. — Many complaints have been received of privy-vaults being full, offensive, not properly constructed or ventilated, etc. We again recommend that wherever it is practicable, privies be abandoned and water-closets used. Where privies must be used, however, it is possible so to construct and manage them as to give no cause for complaint, as is done in some instances in our city. The vault should be water-tight and as near air-tight as possible. It should be emptied often, and during warm weather disinfectants should be freely used. Both vault and privy should be well ventilated. No sink or surface drainage should be allowed to go into the vault. During the year 19 privies have been abandoned.

STABLES. — Several nuisances caused by filthy stables and their surroundings have received our attention. In many cases, owners and occupants of stables do not exercise the care that they should to keep their premises in a cleanly condition, especially when located in thickly settled neighborhoods. They allow the floors to become rotten and saturated with urine and manure, have poor drainage or none at all, provide no suitable pit for manure, and no ventilation for manure or stable. The manure pit and stable should be provided with separate ventilators extending through the roof to a point above neighboring windows, and the cellars should also have proper ventilation.

We recommend that all petitions to the City Council for permission to erect stables be referred to this board.

STAGNANT WATER. — Several long-existing nuisances caused by stagnant water have been abated.

The large pond on land on Broadway opposite the park is in

process of being filled; and when the work is completed, an unhealthy and unsightly pool will be removed.

There yet remain quite a number of localities where these pestilential nuisances exist; and in several cases, the owners of the land and of neighboring estates have petitioned for sewers.

We trust the Board of Aldermen will speedily grant these petitions, as their construction will not only be conducive to health, but enhance the value of real estate in the vicinity.

ALEWIFE BROOK. — The nuisance at Alewife Brook, referred to in our last report, remains in the same condition. In a recent report of a special committee, appointed by the City Council of Cambridge to consider the matter of the prevention of further pollution of the water supply for that city, the following is the first recommendation:—

“That Alewife Brook should, if possible, be restored to purity by withdrawing from it the sewage of Cambridge, and the very offensive matter from the hog-slaughtering house of Niles Brothers; that this relief to the brook can be obtained more advantageously to the city by means of a sewer along the right bank of the stream, from North Avenue to Concord turnpike and thence to Charles River, as recommended in a report of the city engineer.”

If the above recommendation is carried out by the city of Cambridge, the nuisance will be abated.

OFFENSIVE TRADES.

RENDERING. — No permits to render grease have been granted during the year, and a copy of our order forbidding the same has been served upon one person.

One party who was granted in 1878 a recommendation to the Boston Board of Health for a license to collect grease in that city, on the condition that he should not render grease in Somerville, was found in January last to have violated that condition. At our request his license was revoked by the Boston Board of Health, and in consequence he was obliged to suspend his business.

In July last a communication was sent by us to the Cambridge Board of Health, informing them of a nuisance existing at premises on Columbia Street, in Cambridge, near the boundary line, caused by the rendering of grease, the extremely offensive odor from which seriously annoyed those of our citizens residing south

of Union Square, and requesting that the matter receive early attention. The nuisance has not been abated.

Four parties were engaged in the rendering business during the year, namely: Charles H. North & Co., Medford Street; Lincoln, Chamberlin & Co., South Street; Charles O'Neil, Linden Street, and Thomas Spellman, Ward Street. Messrs. North & Co. also do a large pork-slaughtering and packing business, and Messrs. Lincoln, Chamberlin & Co.'s principal business is pork-packing. During the year the last-named firm has, at our request, placed in their works an improved apparatus for destroying noxious gases. We have given considerable attention to Mr. O'Neil's establishment, in which a general grease-rendering business is carried on, principally of house grease. Different methods of disposing of gases have been tried by the proprietor, but he has not as yet procured the best apparatus known. Mr. Spellman does a small business, rendering only the grease that he collects himself. He has recently put in a new apparatus, and keeps his premises very neat.

SLAUGHTERING. — There are four beef-slaughter houses in the city, and one pork-killing, packing, and rendering establishment; the last-named being Messrs. Charles H. North & Co.'s works on Medford Street.

On the 11th of June last, Messrs. North & Co. moved into their new works on Medford Street, on the site of those destroyed by fire June 17, 1878. Since June 11, the premises which they occupied after the fire, and which were formerly owned by the Boynton Packing Company, have been used by Messrs. North & Co. for their cooperage department only. The new buildings are substantial brick structures, three and four stories high, with an aggregate length of 500 feet and an average width of 125 feet. The foundation is of piles capped with granite, upon which is a bed of gravel two feet deep, covered with six inches of concrete sloping to the centre, where a drain extends the entire length of the buildings, flush with the concrete. Six inches above the concrete is the cellar floor of plank, for working purposes. All the other floors are of hard pine, and water-tight, sloping to the centre, the drainage being conveyed by iron pipes to the drain under the cellar floors. An iron pipe on the outside of the building conveys all hot water from tanks, etc., into a brick sewer. The floors of the hog-yards are of hard pine, and water-tight, and are furnished with troughs for fresh water.

In the storehouse for live hogs, which is four stories high, an open space six feet wide, running the entire length of the building, extends from the first floor to a ventilator ten feet wide in the roof. Means of ventilation are also provided for the other buildings. The hogs are driven from the fourth floor of the storehouse to the third floor of the slaughter-house, where they are killed; the blood passing through pipes into a receptacle on the floor beneath. The hogs are dropped to the next lower floor, where they are scalded, cleaned, and dressed for market. The entrails are rendered by steam in tight tanks; the gases going through a condenser, into which chemicals are introduced for the purpose of destroying them. The blood and the residue from the rendering tank are converted into fertilizer in a steam dryer. The rendering tank is of the patent known as the "Perry Digester," the dryer is of the "Hogle" patent, and the condenser is the "Shaw Patent Oxydizer."

The capacity of the works is sufficient to slaughter and prepare for market 1,500 hogs daily.

LICENSES.

The granting of licenses to keep swine and goats, and to collect grease, has been under the supervision of this board during the past year, the same as in 1878; the city clerk being instructed by the Board of Aldermen to issue licenses to such parties as we may direct.

SWINE. — Applications have been received for licenses to keep 169 swine; we have recommended that licenses be granted for 162 (including 100 at the McLean Asylum), and refused for 7.

Two persons have been prosecuted by the chief of police for keeping swine without a license, and have been fined by the court.

GOATS. — Applications have been received for licenses to keep 44 goats; we have recommended that licenses be granted to keep 43, and refused for 1.

GREASE. — Applications have been received from 15 parties for licenses to collect grease, and we have recommended that they all be granted. Of this number 9 reside in Somerville, 3 in Cambridge, 2 in Boston, and 1 in Medford; all of the non-residents having presented recommendations from the Boards of Health of the respective places where they reside.

We have given 15 recommendations for licenses to collect

grease in Cambridge, and 2 recommendations for licenses to collect in Boston.

Number of Somerville people licensed to collect grease in Cambridge in 1879, 15 ; number licensed in Boston, 44. All of those licensed in Cambridge received recommendations from us during the past year ; but nearly all of those licensed in Boston, having been recommended by us in 1878, had their licenses renewed without further recommendations.

ASHES.

Ashes and house dirt have been collected once a month as in 1878, except that in that year the first collection was made in April, making nine collections for the year, while in 1879 there were twelve collections.

Ashes are collected in Ward 1 on the first Monday of each month ; in Ward 2, the second Monday ; in Ward 3, the third Monday ; and in Ward 4, the fourth Monday : and householders are required to place their ashes in suitable receptacles on the outer edge of the sidewalk in front of their premises on the forenoons of these days.

3,999 loads of ashes and dirt were collected in 1879, at a cost of \$977.19.

HOUSE OFFAL.

House offal has been collected during the year by Mr. G. W. Cummings, under a two years' contract dated June 26, 1878, for a compensation of \$980 per annum.

Collections are required to be made three times a week in the months of May, June, July, August, and September ; twice a week in the months of April, October, and November ; and once a week in the months of December, January, February, and March.

REMOVAL OF NIGHT SOIL.

Night soil has been removed during the year by Messrs. Russell & Fitch, the same parties who have done this work for several years past. A new contract for one year was made with them April 25, on the same terms as the former contract ; viz., the compensation to be received by them from the owners or lessees of premises where vaults are emptied, being \$3 per load, or part of a load of eighty cubic feet, in the months of April, May, June, July, August, September, and October, and \$2 for the same in the months of November, December, January, February, and March. 460 vaults and cesspools have been emptied during the year.

Books for orders to clean vaults and cesspools are kept at the police station, Bow Street, and at the grocery store, corner of Perkins and Franklin Streets.

DISEASES DANGEROUS TO THE PUBLIC HEALTH.

SCARLET FEVER. — There were 171 cases of this disease reported during the past year, 15 of which proved fatal. From the 1st of March to the 31st of December, 1878, inclusive, there were 108 cases reported. In the corresponding months of 1879 there were 118 cases reported. The public are not yet fully aware of the dangerous nature of this disease, and we still have much to do before we can hope to stamp it out.

A circular embodying the views of the board as expressed in the first annual report, and containing many valuable suggestions, has been left at every house in which there has been a case of the disease. Children are not permitted to attend school from any house in which a case of the disease occurs, until four weeks after the commencement of the last case.

We have, whenever requested to do so by the family, fumigated houses in which cases of this disease occurred, and since Jan. 1, 1880, have made a rule to fumigate every house in which a fatal case occurs.

DIPHThERIA. — There were 113 cases of diphtheria reported in 1879, and 29 deaths. In 1878 (excluding January and February, when there were no reports) there were 70 cases, with a mortality of 21. During the last ten months of 1879 there were 91 cases and 18 deaths.

The inspector of the board has made a careful inspection of the sanitary condition of every house in which a case of this disease occurred. The evidence presented by him is a strong argument in favor of the theory that insanitary conditions are potent factors in the dissemination of the disease. (See accompanying table.)

We are pleased to be able to report the fact that in houses where this disease occurred, in which the suggestions and orders of the board were carried out, there were no subsequent cases reported.

Of the contagiousness of the disease we have no doubt, having seen many proofs of it during the year.

Since Jan. 1, 1880, every house in which a fatal case has occurred has been fumigated, and houses where the result is not fatal are fumigated if requested.

TYPHOID FEVER. — This disease has not prevailed to any extent during the past year, but 15 cases (3 proving fatal) having been reported, as compared with 18 in the last ten months of 1878. When we consider that we have in our midst many of the predisposing causes of this disease, in imperfect drainage, filthy privies, nauseous cesspools, and large tracts of inhabited territories in which there are no sewers, the wonder is that we have had so few cases.

It is to be feared that some of our physicians do not report their cases of this disease as carefully as those of scarlet fever and diphtheria. The board regards this as a “disease dangerous to the public health,” and physicians and householders alike should remember that they are required by law to report it.

The first of the two following tables shows the number of cases of scarlet fever, diphtheria, and typhoid fever reported, with the number of these cases that have, up to this date, proved fatal. The second shows the number of deaths from each of these diseases in 1877, 1878, and 1879: —

SCARLET FEVER, DIPHTHERIA, AND TYPHOID FEVER REPORTED IN 1879.

MONTHS.	SCARLET FEVER.			DIPHTHERIA.			TYPHOID FEVER.		
	Cases reported.	Fatal cases.	Percentage of deaths.	Cases reported.	Fatal cases.	Percentage of deaths.	Cases reported.	Fatal cases.	Percentage of deaths.
January	40	4	10	13	4	31			
February	13	. . . .	. . .	9	4	44			
March	21	1	5	6					
April	21	2	10	5	1	20			
May	18	. . . .	. . .	3	. . . .	. . .	1	1	100
June	18	1	6	5	1	20	1		
July	6	2	33	2	. . . .	. . .	1		
August	3	. . . .	. . .	6	4	67	2		
September	1	. . . .	. . .	7	2	29	6	1	17
October	4	. . . .	. . .	20	5	25	1		
November	10	3	33	22	2	9	2	1	50
December	16	2	12	15	4	27	1		
Total	171	15	9	113	27	24	15	3	20

DIPHTHERIA IN 1879.—INSPECTOR'S REPORT.

201A

No. of Family.	Nationality.	Occupation of Head of Family.	No. of Patient.	Sex of Patient.	Age of Patient.	Date of Sickness.	Result.	District.	Soil.	Locality.	House Drainage.	Condition of Cellar.	Privy.	Remarks.
1	Italian.....	Laborer.....	1	Female...	6	January.....	Fatal..	IX.	Sand.....	Damp.....	On surface.....	Damp.....	Vault full; privy adjoining kitchen.	This lady attended patient number 3. } About this time there were two fatal cases of } scarlet fever in this house. Soil pipe not ventilated.
2	American.....	".....	2	".....	28	".....	".....	IX.	Clayey Gravel...	Good.....	Waste pipe not trapped.....	Dry.....	Water closet in cellar.....	
3	".....	Agent.....	3	".....	12	".....	Fatal..	IX.	".....	".....	Defect in drain pipe in cellar; waste pipe not trapped....	".....	Water closet in cellar; defective....	
4	".....	".....	4	Male.....	13	".....	".....	VII.	".....	".....	Waste pipe not trapped.....	Offensive odor from vault.....	In shed adjoining house.	
5	German.....	Musician.....	5	".....	3	".....	".....	V.	".....	".....	Good.....	Dry.....	In yard 8 feet from house.....	
			6	Female...	32	".....	".....							
			7	".....	4	".....	".....							
6	American....	Laborer.....	8	".....	3	".....	".....	II.	".....	".....	At times drainage flows into cellar; waste pipe not trap'ed	Damp.....	In yard 10 feet from house.	Offensive odor in sink room from cesspool.
7	Irish.....	".....	9	Male.....	26	".....	".....	V.	Clay.....	".....	Entire system of dra. defective; dra. flowing into cellar.	Filthy.....	Water closet in house.	
8	American....	Bookbinder....	10	".....	3½	".....	Fatal..	V.	Clayey Gravel...	Damp.....	Into cesspool 5 ft. from house; waste pipe not trapped....	Damp.....	In yard 10 feet from house.....	
9	".....	College Professor	11	Female...	3	".....	".....	X.	".....	Good.....	Into cesspool 30 feet from house; waste pipe not trapped..	Dry.....	Water closet in house.	
10	".....	Salesman.....	12	Male.....	24	".....	".....	II.	".....	".....	Drain pipe defective.....	No cellar.....	".....	
11	".....	Clerk.....	13	".....	23	".....	".....	VII.	".....	".....	Good.....	Dry.....	W. c. in h.; supplied by w.p. from sink	Soil pipe not ventilated.
12	Irish.....	Carpenter.....	14	Female...	34	February.....	".....	III.	Sand.....	Low.....	Into cesspool 10 ft. from house; waste pipe not trapped..	Basement rooms.....	Water closet in house.	
			15	".....	8	".....	Fatal..							
			16	".....	3	".....	".....							
			17	".....	1	".....	".....							
			18	Male.....	5	March.....	".....							
13	American....	(Widow).....	19	".....	9	February.....	".....	VII.	Clayey Gravel...	Good.....	Opening in drain pipe in cellar; joints of d. p. not cement'd	Damp.....	In yard 10 feet from house.	Soil pipe not ventilated.
14	".....	Salesman.....	20	".....	3½	".....	Fatal..	IX.	Sand.....	".....	Good.....	Dry.....	Water closet in house.....	
15	".....	Ice Tool Maker..	21	Female...	2	".....	".....	IX.	".....	".....	On surface, 8 feet from house.....	Damp.....	In yard 8 feet from house.	
			22	".....	36	".....	".....							
16	Irish.....	Laborer.....	23	Male.....	2½	".....	".....	VIII.	Clay.....	Low and damp.....	No drainage; slops thrown into yard.....	No cellar.....	In yard; vault full.	
			24	".....	6½	September.....	".....							
17	".....	".....	25	".....	6	March.....	".....	I.	Clayey Gravel...	Low.....	Connection of w. p. with d. p. defective; w. p. not trapped	Dry.....	In yard 6 feet from house; vault full.	Offensive odor from sink.
			26	Female...	3	".....	".....							
18	American....	Superintendent..	27	".....	33	".....	".....	III.	".....	Good.....	Good.....	".....	Water closet in house.....	Soil pipe not ventilated.
19	".....	Clerk.....	28	Male.....	30	".....	".....	I.	Clay.....	Low and damp.....	Connection of w. p. with d. p. defective; w. p. not trapped	Damp.....	In yard 8 feet from house.	
20	Irish.....	(Widow).....	29	Female...	20	".....	".....	I.	".....	".....	".....	".....	".....	
21	American....	Brass Finisher..	30	Male.....	1	April.....	".....	III.	".....	Low.....	Drain pipe in cellar broken.....	".....	Water closet in house.	
22	".....	Restaur't Keeper	31	Female...	5	".....	".....	II.	Clayey Gravel...	Good.....	Connection of w. p. with d. p. defective; w. p. not trapped.	Dry.....	In yard.	
			32	".....	3	".....	".....							
23	Irish.....	Hostler.....	33	Male.....	4½	".....	Fatal..	I.	Clay.....	Low.....	No drainage; three houses in block.....	Basement rooms.....	".....	Cow stable about twelve feet from house. Soil pipe not ventilated.
24	American....	(Widow).....	34	Female...	3	".....	".....	V.	Clayey Gravel...	Good.....	Good.....	Dry.....	Water closet in cellar.....	
25	".....	Clerk.....	35	Male.....	4	May.....	".....	II.	".....	".....	Opening in drain pipe in cellar; waste pipe not trapped..	Damp.....	"..... defective.	
26	".....	Engineer.....	36	Female...	10	".....	".....	V.	".....	".....	Connection of w. p. with d. p. defective; w. p. not trapped	Dry.....	".....	
27	".....	Printer.....	37	Male.....	5	".....	".....	II.	".....	".....	Opening in drain pipe in cellar.....	".....	".....	
28	".....	(Widow).....	38	Female...	35	June.....	".....	V.	".....	".....	Into cesspool 14 ft. from house; waste pipe not trapped	".....	In yard 12 feet from house.	Drainage flowing into cellar.
29	".....	".....	39	".....	5	".....	".....	II.	".....	".....	Opening in drain pipe in cellar; waste pipe not trapped..	Damp.....	" 6 feet from house.....	
30	Irish.....	Painter.....	40	".....	9	".....	".....	I.	Clay.....	Low and damp.....	Defect.....	".....	" 6 " " ".....	
31	American....	Undertaker....	41	".....	3	".....	Fatal..	V.	Sand.....	Good.....	Waste pipe not trapped.....	".....	" 20 " " ".....	
			42	Male.....	5	".....	".....							
32	".....	Clerk.....	43	".....	3	July.....	".....	III.	Clay.....	Low.....	Connection of w. p. with d. p. defective; w. p. not trapped	".....	Water closet in house.....	} Conductors from roof near chamber window } connected with drain. Vault in cellar defective.
33	".....	Minister.....	44	Female...	10	".....	".....	V.	Clayey Gravel...	Good.....	Into cesspool 4 feet from house.....	Dry.....	".....	
34	Irish.....	Laborer.....	45	Male.....	40	August.....	".....	VI.	Clay.....	Low and Damp.....	On surface.....	No cellar.....	In yard 5 feet from house.	
35	American....	Trader.....	46	".....	3	".....	Fatal..	VIII.	Clayey Gravel...	Good.....	Into cesspool 12 ft. from house; c. of w. p. with d. p. defe	Dry.....	Adjoining house.....	
36	Irish.....	Laborer.....	47	".....	2	".....	".....	I.	Clay.....	Low.....	Waste pipe not trapped.....	Basement rooms.....	In yard 15 feet from house.	
37	American....	Clerk.....	48	Female...	10	September..	".....	V.	Sand.....	Good.....	Drain pipe and waste pipe not trapped.....	Dry.....	" 10 feet from house.....	{ Blind drain in cellar, connected with drain } pipe and not trapped.
			49	Male.....	33	".....	".....							
			50	".....	8	".....	".....							
38	".....	Dentist.....	51	Female...	7	".....	Fatal..	V.	".....	".....	Rain water conductors connected with drain, and not tr'd.	".....	Water closet in cellar; not trapped.	
39	American....	Merchant.....	52	".....	7	September..	".....	V.	Clayey Gravel...	".....	Good.....	".....	" " " defective.	
40	".....	Clerk.....	53	Male.....	7	".....	".....	V.	".....	".....	D. p. not tr'd; opening in d. p. in c.; c. of w. p. with d. p. d.	".....	" " " " "	Soil pipe not ventilated.
41	".....	Produce Dealer..	54	Female...	7	".....	".....	V.	".....	".....	Good.....	".....	Water closet in house.....	
42	Irish.....	Salesman.....	55	Male.....	7½	October.....	".....	V.	Sand.....	".....	Waste pipe not trapped.....	".....	6 feet from house; offensive.	
43	".....	Gr. & Soap Dea'r	56	Female...	4½	".....	".....	V.	Clayey Gravel...	".....	Defect in drain pipe in cellar; waste pipe not trapped....	".....	Water closet in house.....	
44	American....	Merchant.....	57	Male.....	10	".....	".....	VII.	".....	".....	Offensive odor in bath room and closet adjoining.....	".....	" " " " "	

No. of Family.	Nationality.	Occupation of Head of Family.	No. of Patient	Sex of Patient.	Age of Patient	Date of Sickness.	Result.	District	Soil.	Locality.	House Drainage.	Condition of Cellar.	Privy.	Remarks.
45	Irish	Laborer	58	Male	2	October	Fatal.	V.	Clay	Fair	Into cesspool 3 ft. from house; dr. and w. pipe not trapped	Damp	12 feet from house	Well 2 ft. from house; water from same offensive
			59	Female	11 $\frac{1}{4}$	"	"							
			60	Male	14 $\frac{1}{4}$	"	"							
46	"	"	61	"	4 $\frac{1}{2}$	"	"	V.	Clayey Gravel	Good	On surface, 40 feet from house; w.p. not trapped	"	10 feet from house	Vault full.
			62	Female	1 $\frac{1}{2}$	"	"							
			63	"	31 $\frac{3}{4}$	"	"							
47	American	Clerk	64	Male	6	"	"	IX.	Sand	"	Into cesspool 4 feet from house; not ventilated	Dry	Adjoining kitchen	Offensive odor in house from vault.
			65	"	7	"	"							
48	Irish	(Widow)	66	"	4	"	"	V.	"	"	Waste pipes not trapped	Basement rooms	Water closet in house.	
49	American	Merchant	67	Female	6	"	"	VIII.	Clayey Gravel	"	Defect in drain pipe in cellar	Dry	"	Rain water conductor not tr'd; 2 ft. from window
50	"	Laborer	68	Male	35	"	"	I.	"	"	Into cesspool 4 ft. from house; w. and dr. pipe not trapped	Hens in cellar	20 feet from house	Wooden box waste pipe; broken and leaking.
51	"	Furniture-mover	69	Female	6	"	"	VII.	"	"	Waste pipe not trapped	Dry	Water closet in house	{ Eight days before sickness, head of family
52	"	Teamster	70	"	17	"	"	VII.	"	"	Offensive odor in b.r. from w.e. and insufficiency of water	Damp	"	moved, a family in Charlestown that had a
53	Irish	Laborer	71	"	4 $\frac{1}{2}$	"	Fatal.	I.	Clay	Low and damp	Waste pipe not trapped	No cellar	15 feet from house.	{ fatal case of diphtheria.
54	American	Produce Dealer	72	"	15	"	"	VII.	Clayey Gravel	"	"	Dry	Water closet in house.	
55	Irish	Laborer	73	"	3	"	Fatal.	VII.	"	Good	"	"	In l. of house	Offensive odor in house from vault.
56	American	Merchant	74	"	17	"	"	VII.	"	"	Connection of s. p. with d. p. defective; w. p. not trapped.	Damp	Water closet in house.	
57	"	Glass-worker	75	"	13	November	"	V.	"	"	Opening in drain pipe in cellar; waste pipe not trapped.	Dry	"	
58	"	Teamster	76	"	"	"	"	VI.	Clay	Wet	On surface; no drainage	"	8 feet from house.	
59	"	"	77	Male	"	"	"	VI.	"	"	"	"	"	
60	"	(Widow)	78	"	17	"	"	VII.	"	"	Into cesspool 4 feet from house	Dry	Water closet in house	{ Overflow pipe from well empties into cesspool
61	"	Milkman	79	"	4 $\frac{1}{2}$	"	"	VIII.	Clayey Gravel	Low and damp	Defect in drain pipe in cellar; on surface	Damp	"	and is not trapped.
62	Swede	Coppersmith	80	"	5 $\frac{1}{2}$	"	"	VII.	"	Good	Waste pipe not trapped	Dry	"	
63	Irish	Contractor	81	"	5	"	"	VII.	"	Fair	"	"	12 feet from house	Stable 10 feet from house, and offensive.
64	American	Furniture mover	82	Female	22	"	"	II.	"	Good	Into cesspool 20 ft. from house; waste pipe not trapped	"	Water closet in house.	
65	"	Produce Dealer	83	"	27	"	"	VII.	"	"	Waste pipe not trapped	"	"	
66	"	Merchant	84	"	4	"	"	VIII.	"	"	Good	"	"	Drain ventilated in cellar into the chimney.
67	Irish	Laborer	85	"	3	"	"	VII.	"	Fair	Waste pipe not trapped	Damp	10 feet from house.	
68	American	(Widow)	86	"	55	"	"	II.	"	Good	Good	Dry	Water closet in house	Soil pipe not ventilated.
69	"	Butcher	87	Male	30	"	"	VII.	"	"	Opening in drain pipe in cellar; waste pipe not trapped	"	"	
70	"	Jeweller	88	"	14	"	"	V.	"	"	Good	"	"	"
71	"	Messenger	89	"	8	"	"	IV.	Sand	Low	Defect in drain pipe under l. of house	"	"	"
72	"	Clerk	90	Female	3	"	"	II.	Clayey Gravel	Good	Good	Damp	"	"
73	"	Provision Dealer	91	Male	8	"	Fatal.	V.	Sand	"	Drain pipe in cellar leaking	"	Water closet in house.	"
			92	"	4	December	"							
74	"	School Teacher	93	"	8	November	"	VII.	Clayey Gravel	"	Into cesspool 8 feet from house; waste pipe not trapped	Dry	"	
			94	"	4	"	"							
75	"	Clerk	95	"	4	"	"	VII.	"	"	Connection of w. p. with d. p. defective; w. p. not trapped	Damp	"	{ Occupants complain of offensive odor in kitchen
76	"	Manufacturer	96	Male	9	"	"	VII.	"	"	Opening in drain pipe in cellar; waste pipe not trapped	Dry	"	from sink.
77	"	Agent	97	"	4	December	"	II.	"	"	Good	"	"	Soil pipe not ventilated.
78	"	(Widow)	98	"	11	"	Fatal.	X.	"	"	Into cesspool 10 feet from house	"	Water closet in cellar; defective.	
79	"	Carpenter	99	"	3 $\frac{1}{2}$	"	"	IX.	"	"	Into two cesspools, one 3 and one 5 ft. from h.; w.p. not tr'd	"	Water closet in house.	
80	"	Iron Dealer	100	"	37	"	"	V	"	"	Defect in drain pipe in cellar; waste pipe not trapped	"	Water closet without water.	
81	"	Minister	101	"	10	"	"	V.	"	"	Opening in d.p. in cellar; connection of s.p. with d. defective	"	Water closet in house.	
82	"	Produce Dealer	102	"	3	"	Fatal.	VII.	Clayey Gravel	Good	Into cesspool 6 ft. from house; waste pipe not trapped	Dry	In yard 6 feet from house.	{ Drainage from two houses into cesspool, 3 ft.
83	"	Laborer	103	"	9	"	"	IV.	Gravel	Fair	Water closet without trap; waste pipe not trapped	"	Water closet not trapped	from house, overflow from cesspool on surface.
			104	"	7	"	"							Soil pipe not ventilated.
84	American	"	105	Female	18	"	"	II.	Clayey Gravel	Good	Connection of waste pipe with drain pipe defective	"	"	
85	"	Carpenter	106	Male	7	"	"	II.	"	"	Waste pipe not trapped	"	5 feet from house; offensive.	
86	Irish	Laborer	107	Female	6	"	"	IV.	"	"	On surface	Damp	8	
87	American	Police Officer	108	"	11	"	"	VII.	"	"	Waste pipe not trapped	Dry	Water closet in house	Soil pipe not ventilated.
88	"	Clerk	109	Male	1 $\frac{1}{2}$	"	Fatal.	IV.	Sand	"	"	Basement rooms	"	"
89	"	Salesman	110	Female	5	"	"	VII.	Clayey Gravel	"	Drain pipe in cellar broken	Dry	"	"
90	"	Blacksmith	111	"	7	"	Fatal.	I.	"	Low and damp	Opening in drain pipe in cellar; waste pipe not trapped	Damp	8 feet from house.	
91	German	Laborer	112	"	3	August	"	VIII.	Clay	"	No drainage; on surface	No cellar	5 feet from house.	
			113	"	6	"	"							

DEATHS FROM SCARLET FEVER, DIPHTHERIA, AND TYPHOID FEVER
IN 1877, 1878, AND 1879.

MONTHS.	SCARLET FEVER.			DIPHTHERIA.			TYPHOID FEVER.		
	1877.	1878.	1879.	1877.	1878.	1879.	1877.	1878.	1879.
January	4	...	4	...	4	6	2		
February . . . . .	...	...	1	4	4	4			
March	1	...	1	9	5				
April . . . . .	...	1	2	7	1	1			
May . . . . .	...	...	...	8	...	...	...	...	1
June . . . . .	...	...	1	6	1	1			
July	1	...	2	1	2	...	1		
August	2	...	...	3	1	4	...	2	
September . . . . .	...	...	...	4	1	2	...	1	1
October . . . . .	...	3	...	4	2	5	1	1	
November	1	4	3	5	1	2	...	...	1
December	1	7	2	8	5	4	2	1	
Total	10	15	16	59	27	29	6	5	3

SMALL-POX. — We are fortunately free from this loathsome disease. There have been no deaths from it in our city since 1875, when there was one fatal case. It has again made its appearance in the United States, and deaths from it have occurred in Washington, New York, Philadelphia, San Antonio, and Worcester. During the past year, it was prevalent in many of the large cities of Europe, notably in Paris (where it was the cause of 214 deaths after Aug. 21), London, Liverpool, and Dublin. For some time it has existed along the borders of our own country, — in Montreal and St. John in the north, and in Cuba in the south. It has also visited Brazil, where there were 57 deaths in the months of November and December last.

At irregular intervals there seems to be a marked susceptibility on the part of communities to the contagion of this disease, and judging from the facts above stated, we believe we are now entering upon such a period.

People (and more especially very young people) unprotected by vaccination are more liable to contract the disease than others.

The appearance of the disease in Worcester, to which place it was brought from Canada, should serve as a warning to us. We have reason to believe that there are a great many people in this city who have not been vaccinated. There are a number of French Canadians in our midst, and it is a well-known fact that these people are very much opposed to vaccination.

We feel it our duty to earnestly urge upon you the importance of making provision at once for the vaccination of all persons in the city who are not already protected by this means. Delay in this matter may result in much needless sickness and death.

CERTIFICATES OF DEATH.

In compliance with the requirements of Chap. 174 of the Acts of 1878, we have approved 398 certificates of death and 25 certificates of still-births.

MYSTIC WATER.

Early in the year, complaints were made to this board of the impure water furnished by the Mystic Water Works. These complaints continued from time to time, and on June 19 the following letter was sent to the Boston Water Board: —

OFFICE OF THE BOARD OF HEALTH, CITY HALL,
SOMERVILLE, MASS., June 19, 1879.

Boston Water Board:

GENTLEMEN, — We have recently had several complaints of impurities in the Mystic water, and we have personally found the water at different times to be discolored.

Will you please inform us whether or not the drainage from all the tanneries and other manufactories situated within the limits of the Mystic “water-shed” has been turned into the new Mystic Valley sewer? Will you also please inform us what is the proper method of caring for our distribution pipes so as to prevent the accumulation of impurities in them? and oblige

Yours respectfully,

THE BOARD OF HEALTH OF SOMERVILLE,

By GEORGE I. VINCENT,

Clerk.

The following reply was received : —

CITY OF BOSTON.

BOSTON WATER BOARD OFFICE,
CITY HALL, June 30, 1879.

To the Board of Health of Somerville :

GENTLEMEN, — Your communication of the 19th inst. was received, and we have to reply to your inquiries as follows : —

1st. The following proprietors of tanneries have entered their drainage into the sewer: Alex'r Moseley, Eustis Cummings, James Houston, Francis L. White, Bryant & King, and Lewis Shaw.

2d. If the water contains impurities, we know of no way to prevent them from going into the pipes.

The usual method of cleaning pipes when the water becomes discolored, as it sometimes does more or less, is by flushing out the pipes with the "blow-off" into the sewers, or else, as is the case with the pipes in your city, where there is no regular system of "blow-offs," it is necessary to use the hydrants for that purpose.

In regard to the present condition of the water of Mystic Lake, we have to say that our superintendent reports that he never saw it looking better or clearer than it does to-day.

Very respectfully,

BOSTON WATER BOARD,

By W. E. SWAN,

Clerk.

In the month of July the water was found to contain large quantities of greenish vegetable matter, and samples were sent to this office by different citizens. It was also represented to us by physicians that in their opinion the impure water caused an unusual number of diarrrhœal diseases.

In order to inform ourselves of the exact facts in the matter, the following circular was sent to all physicians known to practise in this city : —

OFFICE OF BOARD OF HEALTH, CITY HALL,
SOMERVILLE, MASS., July 21, 1879.

DEAR SIR, — From statements made by different physicians, we have reason to believe that the present impure condition of the Mystic water is the cause of several cases of diarrrhœal diseases in our city. You are hereby invited to meet us at this office, on

Wednesday next, the 23d inst., at 4 P. M., for the purpose of advising with the board in the matter, and by so doing oblige

Yours respectfully,

THE BOARD OF HEALTH OF SOMERVILLE,

By GEORGE I. VINCENT,

Clerk.

At the meeting held July 23, twelve physicians were present, also the mayor and city physician of Chelsea.

One physician stated that he had been called to several cases of diarrhœa that he attributed to the use of Mystic water.

A letter dated July 22 was received from a physician at the McLean Asylum, in which he said, "The impure, contaminated state of the water we are of necessity obliged to drink has developed a number of cases of diarrhœa, quite unusual and uncommon for us here, who are remarkably free from such diseases. I can and have attributed their origin entirely to drinking Mystic water."

The other physicians were of the opinion that there was not, at the present time, an unusual prevalence of diarrhœal diseases; but they had advised their patients to drink spring or well water, or to strain and boil the Mystic water before using it.

It was voted to issue a circular to the people embodying the sentiments of the meeting. The following circular was published in the Somerville papers, and distributed to the people by the police: —

CITY OF SOMERVILLE.

OFFICE OF BOARD OF HEALTH, CITY HALL,
SOMERVILLE, MASS., July 23, 1879.

To the Consumers of Mystic Water in Somerville:

At a meeting of this board with a large number of the leading physicians of Somerville and vicinity, held this day, it was voted unanimously that, while the present impurities in the Mystic water are not considered poisonous, and there is not an unusual prevalence of diarrhœal diseases in our city, yet, in order to avoid the possibility of sickness which might be caused thereby, and in view of the fact that we are just approaching the season (August and September) when diarrhœal affections are much more likely to prevail, the following precautions are suggested in the use of Mystic water, which may become more harmful as the season advances: —

First. Strain or filter the water. The simplest way to do this is by the use of a flannel or cotton-flannel bag. All strainers and filters should be changed or cleansed frequently.

Second. Boiling the water would be an additional precaution.

The board would take this opportunity to make the further suggestion, that people should be cautious in resorting to the use of old and perhaps long-disused wells, and also wells in locations where the water may be contaminated by drainage or otherwise. Ice water should ALWAYS be used sparingly.

Per order of the Board of Health,

GEORGE I. VINCENT,
Clerk.

After visiting the "water-shed" of the Mystic Lake, and consulting with the city solicitor, the following communication was presented to the City Council: —

OFFICE OF THE BOARD OF HEALTH, CITY HALL,
SOMERVILLE, MASS., July 29, 1879.

To the Honorable the Mayor and City Council of the City of Somerville:

Respectfully represents the Board of Health of said city of Somerville, that certain firms and individuals, — to wit, Messrs. J. P. Crane & Co., ——— Taylor, E. M. Blake, and James Skinner & Co., and other persons whose names your petitioners have not as yet been able to obtain, — all of whom, in the town of Woburn, county of Middlesex, and Commonwealth of Massachusetts, are carrying on the business of tanning and other business at divers factories situated upon or near the line of Russell Brook in said Woburn, and that in so doing said firms and individuals, in violation of Chap. 183 of the Acts of this Commonwealth for the year 1878, are discharging and causing to be discharged into Mystic Lake, which is used as a source of water supply by said city of Somerville, and into said Russell Brook, so used as aforesaid as a source of water supply by said city of Somerville, and within twenty miles above the point where such supply is taken, certain sewage, drainage, refuse and polluting matter, of such quality and amount as, both by itself and in connection with other matter, is corrupting and impairing the quality of said water for domestic use, and is rendering it deleterious to health; and that said violation of law should be immediately prevented, and said firms and

individuals ordered by the State Board of Health, Lunacy, and Charity to cease and desist from such violation, and to remedy the said pollution.

Wherefore the said Board of Health respectfully requests that an application may be made by said city of Somerville to said Board of Health, Lunacy, and Charity, as provided by said Chap. 183 of the Acts of 1878, to take such action in the premises as may be found necessary.

By order of the Board,

GEO. I. VINCENT,
Clerk.

July 29, the City Council passed an order requesting his Honor the Mayor to make application to the State Board of Health, Lunacy, and Charity, in accordance with our communication, to take immediate action in the premises.

The application was forthwith presented to the State Board of Health, and at about the same time that board received a similar application from the Boston Water Board.

A hearing was given on both applications Aug. 8, when, in order to facilitate the business, the application from the city of Somerville was withdrawn, and our city solicitor joined with the counsel for the city of Boston in conducting the case. At their suggestion the State Board voted to visit the premises complained of, and proceeded immediately to Woburn and Winchester for that purpose.

On the 9th instant an agreement was made by owners of tanneries with the Boston Water Board that they would cease draining into the lake; and further action before the State Board was deferred. After the laying of the necessary drains and the building of catch-pits, etc., the drainage from the tanneries referred to in our communication to the City Council was diverted from the water supply into the Mystic Valley sewer.

We have visited the water-shed of Mystic Lake several times during the year, in company with physicians and others, and found large quantities of sewage from dwellings, tanneries, and other manufactories discharging into the lake.

A large portion of the area flowed is what is term "shallow flowage," which is the cause of the water being contaminated by the growth and decay of vegetable matter.

The towns of Winchester and Woburn, and a part of Stoneham, are situated on the drainage area or water-shed of the lake. These towns are compact and undrained. There are 134 water-closets in Woburn and 175 in Winchester.

The drainage from the tanneries of John Cummings & Co. and Bishop & Co., in Cummingsville, is at present conducted into filter basins near one of the tributaries of the lake. This is an experiment which we have carefully watched, and at present we are in doubt as to whether the drainage is polluting the water supply or not; we are of the opinion, however, that the only safe permanent arrangement that can be adopted is to remove this drainage by proper sewerage. The drainage from Dow & Co.'s tannery still flows unobstructed into another tributary of the lake.

The Mystic Valley sewer, built by the city of Boston, is a long distance from these last-named tanneries, and cannot be used by them.

We were informed by the Boston Water Board some months ago that they had notified a large number of parties to discontinue polluting the water supply; but at this date the filth from the large tannery of Dow & Co., in Woburn, the refuse from manufactories and the sewage from numerous dwellings is discharging into the tributaries of the lake.

The diverting of the tannery drainage from the lake into the sewer is but the commencement of the work necessary to purify the water. A proper system of sewerage should be provided for Winchester, Woburn, and Stoneham; filth and decayed vegetable matter in the ponds should be removed; the shores of ponds and streams improved, and means taken to prevent the growth of vegetation in them. In addition to this, the water, in our opinion, could be improved by filtering, as is done in many other cities and towns.

SEWERS.

In our last annual report the attention of the City Council was called to the necessity for a trunk sewer to drain the "Patch," and the thickly settled section in the vicinity of Lowell and Hinekey Streets and Jenny Lind Avenue.

No action has been taken by the City Council, and the sanitary condition of these districts remains the same as in 1878.

The sewage from houses on Tufts Street and Fountain Avenue continues to flow into the open gutters, and is a cause of complaint

from the residents and persons passing through the streets. A petition is now before the Board of Aldermen for a sewer in Tufts Street, which we hope will be considered favorably.

The sewage from all the dwellings on Fairlee Street (off Cherry Street) is now conducted into an adjoining field, where it creates a dangerous nuisance. Several fatal cases of diphtheria have occurred in the immediate vicinity during the past year. In our opinion the only way of permanently abating this nuisance is by the construction of a sewer in Cherry Street, with a lateral sewer in Fairlee Street. A petition for a sewer in Cherry Street has been presented to the Board of Aldermen, and we recommend that it be granted at an early day.

A sewer in Pearl Street near Marshall Street would not only contribute to the health of the neighborhood, but would render marketable large tracts of land that are now practically worthless on account of their wet condition.

A sewer is also needed in Winthrop Avenue, the houses there being unfit for habitation, on account of the stagnant water which constantly stands upon the premises and upon land adjoining.

We would renew our recommendation of last year, that sewers be provided for the thickly settled streets on the northeasterly side of Winter Hill.

We deem it our duty to urge the necessity of proper sewerage. The residents in localities where sewers are needed have no authority to build sewers for themselves, but are entirely dependent upon the city for relief.

A large number of petitions for sewers are now before the Board of Aldermen, and we hope that in their consideration proper regard will be paid to the urgent requests of owners of houses, notwithstanding the owners of vacant lands may object because of assessments.

The result of the use of cesspools in porous soil was forcibly illustrated last season during the excavation for the sewer in Park Street. The stench emitted from the earth as it was removed from the trench proved conclusively that the filth from cesspools not only saturates the soil in close proximity to them, but is liable to render the whole neighborhood unfit for the location of dwellings.

During the past year the construction of sewers in Joy Street and Line Street has enabled the owners of property to abate intolerable nuisances.

A good sanitary improvement was also made by the construction of a system of sewers in Clarendon Hill.

A sewer has also been placed in Hamlet Street, the need of which was noted in our last report.

HOUSE DRAINAGE.

The house drainage in nearly all the dwellings in this city is defective; reports being received from the inspector, almost every day, of broken and leaking drains, drains without traps, defective joints, etc.

We are convinced that these defects, which are wholly inside the dwellings, cause many cases of zymotic diseases.

Poor workmanship is responsible for much of the trouble, as evidences of gross ignorance and carelessness on the part of mechanics are frequently brought to our notice.

Many new arrangements have been proposed and invented, but the following are admitted by all sanitary experts to be absolutely necessary in a proper system of house drainage: —

All pipes in or under the dwelling to be of iron or lead, with tight joints.

House sewer to be trapped just before leaving the house or in manhole outside.

Soil pipe to be extended through the roof, at its full size.

Each pipe to be trapped close to its connection with water-closet, bath, bowl, sink, or other fixture.

We think it necessary that all house draining and plumbing be done in accordance with regulations made by this board, and that an inspector be appointed to superintend the work.

MORTALITY IN SOMERVILLE IN 1879.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Zymotic Diseases.													
MIASMATIC.													
Scarlet Fever	4	1	1	2	..	1	2	..	..	..	3	2	16
Diphtheria	6	4	..	1	..	1	..	4	2	5	2	4	29
Croup	2	2	2	..	..	..	..	..	..	..	..	..	6
Whooping Cough . . . . .	..	..	..	..	1	..	..	..	..	..	..	..	1
Typhoid Fever . . . . .	..	..	..	..	1	..	..	..	1	..	1	..	3
Erysipelas . . . . .	..	1	..	..	..	..	..	..	..	..	..	..	1
Dysentery . . . . .	..	..	..	..	..	..	2	2	2	..	..	..	6
Diarrhœa . . . . .	..	..	1	..	..	..	2	2	2	..	..	..	7
Cholera Infantum . . . . .	..	..	..	..	1	1	2	13	2	1	..	..	20
Cholera Morbus . . . . .	..	..	..	..	..	..	..	1	..	..	..	..	1
Cerebro-Spinal Meningitis	1	..	..	..	..	..	..	..	..	..	..	..	1
Puerperal Fever . . . . .	..	..	..	..	..	..	..	..	..	..	..	1	1
Puerperal Peritonitis . . . . .	..	..	1	..	..	..	..	..	..	..	..	..	1
Septicæmia . . . . .	..	2	..	..	..	..	..	..	..	..	1	..	3
Rheumatism . . . . .	..	..	..	..	1	..	..	..	..	..	..	1	2
DIETIC.													
Delirium Tremens . . . . .	..	..	..	..	..	..	..	..	..	..	1	..	1
Constitutional Diseases.													
DIATHETIC.													
Dropsy and Anæmia . . . . .	..	2	1	1	..	..	1	..	..	1	..	1	7
Cancer . . . . .	..	..	..	1	1	..	2	..	1	..	1	..	6
Cancer of liver . . . . .	..	1	..	..	..	..	..	..	..	..	..	..	1
Mortification . . . . .	..	..	..	..	..	1	..	..	..	..	..	..	1
TUBERCULAR.													
Phthisis Pulmonalis	4	5	4	6	8	3	6	7	7	8	3	6	67
Tubercular Meningitis . . . . .	..	..	1	..	1	1	1	..	..	1	..	1	6
Tubercular Enteritis . . . . .	..	..	..	..	..	..	..	..	..	..	1	..	1
Hydrocephalus . . . . .	..	..	..	..	1	..	1	..	..	..	..	..	2
Marasmus . . . . .	..	..	..	1	..	1	..	1	..	2	1	..	6
Local Diseases.													
NERVOUS SYSTEM.													
Apoplexy . . . . .	..	..	..	2	..	1	..	..	..	1	2	2	8
Paralysis	1	2	..	..	2	1	..	..	..	3	1	1	11
Insanity	1	1	..	..	..	..	1	..	..	1	1	2	7
Epilepsy . . . . .	..	..	..	..	1	..	..	..	..	..	..	..	1
Convulsions . . . . .	..	..	2	..	1	1	..	..	..	..	..	1	5
Brain Diseases	2	1	..	1	..	1	..	1	1	2	2	..	11
Laryngismus Stridulus . . . . .	..	1	..	..	..	..	..	..	..	..	..	..	1
Cerebral Meningitis . . . . .	..	..	..	1	..	..	4	1	1	1	..	..	8
ORGANS OF CIRCULATION.													
Pericarditis . . . . .	..	..	..	1	..	..	..	..	..	1	..	..	2
Phlebitis . . . . .	..	..	..	..	..	..	..	..	..	1	..	..	1
Heart Diseases	2	4	3	3	3	..	2	3	2	1	..	2	25
RESPIRATORY ORGANS.													
Laryngitis	1	..	..	..	..	..	..	..	..	..	..	..	1
Bronchitis	1	2	1	..	1	..	..	..	..	1	..	..	6
Pneumonia	3	4	3	7	3	2	..	2	..	1	2	1	28
Congestion of Lungs	1	..	..	..	..	..	..	..	1	..	..	..	2
Pleur sy . . . . .	..	..	..	..	1	..	1	..	..	..	..	..	2
Lung Diseases . . . . .	..	..	1	..	..	..	..	..	1	..	..	..	2

MORTALITY IN SOMERVILLE IN 1879, *continued.*

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
DIGESTIVE ORGANS.													
Gastritis . . . . .	..	..	..	2	..	..	1	..	..	..	..	..	2
Enteritis . . . . .	..	..	..	1	1	..	2	..	..	1	..	..	2
Peritonitis . . . . .	..	..	..	1	..	..	2	2	..	..	..	..	6
Abscess in Stomach . . . . .	..	..	..	1	..	..	..	..	..	..	..	..	1
Indigestion . . . . .	..	..	1	..	..	..	..	..	..	..	..	..	1
Ulceration of Intestines . . . . .	..	..	..	..	..	..	..	..	..	..	2	..	2
Hemorrhage from Bowels . . . . .	..	..	..	..	..	..	..	..	..	..	..	1	1
Hernia . . . . .	..	..	..	..	..	..	..	1	..	..	..	..	1
Abdominal Tumor	1	..	..	..	..	..	..	..	..	..	..	..	1
Jaundice	1	..	1	..	..	..	..	1	..	..	..	..	3
Liver Disease . . . . .	..	..	..	..	..	..	..	..	..	1	..	..	1
URINARY ORGANS.													
Nephritis . . . . .	..	..	..	2	..	..	1	..	1	..	..	..	4
Bright's Disease . . . . .	..	..	..	..	1	1	1	..	..	..	..	..	3
Diabetes . . . . .	..	1	..	..	..	..	..	..	..	..	..	..	1
Disease of Kidneys . . . . .	..	..	2	..	..	1	..	..	..	..	..	..	3
GENERATIVE ORGANS.													
Ovarian Disease . . . . .	..	..	..	..	..	..	1	..	..	..	..	..	1
Developmental Diseases													
OF CHILDREN.													
Premature Birth and Infantile Debility	2	2	..	..	2	1	3	1	..	1	..	2	14
Cyanosis . . . . .	..	1	1	..	1	..	..	2	..	..	..	..	5
Imperforate Anus . . . . .	..	..	..	..	..	1	..	..	..	..	..	..	1
OF WOMEN.													
Childbirth . . . . .	..	..	..	..	..	..	..	..	..	..	1	..	1
OF OLD PEOPLE.													
Old Age	1	..	1	..	1	1	..	2	1	1	1	..	9
DISEASES OF NUTRITION.													
Atrophy and Debility	2	2	..	..	1	1	..	..	..	..	..	..	6
Violent Deaths.													
Railroad . . . . .	..	..	..	..	..	..	..	..	1	..	..	..	1
Scalding . . . . .	..	..	..	..	..	..	..	..	1	..	..	..	1
Suffocation	1	..	..	..	1	..	..	..	..	..	..	..	2
Fracture of Skull . . . . .	..	..	..	..	1	..	..	..	..	..	..	..	1
Exhaustion following injury . . . . .	..	..	..	..	..	..	..	..	..	..	1	..	1
Accident not specified . . . . .	..	..	..	..	1	..	1	..	..	..	..	..	2
SUICIDE.													
Drowning . . . . .	..	..	..	1	..	..	..	..	..	..	..	..	1
Unknown . . . . .	..	1	..	..	1	1	..	..	..	..	..	..	3
Total	37	40	27	34	38	22	37	46	27	35	27	28	398
Still-born	2	2	6	4	..	2	1	..	1	5	1	1	25

Death rate per thousand, based on an estimated population of 23,562 16.9

DISTRICTS.

The comparison of the rates of mortality, the prevalence of diseases dangerous to the public health, and the number of nuisances abated in the ten sanitary districts of the city, which was begun in 1878, has been continued during the past year.

In estimating the population, we have taken that of 1878, as stated in our last report, as a basis; and having ascertained from the assessors' books the increase of polls in 1879 over the number in 1878 to be $4\frac{7}{10}\frac{2}{9}$ per cent, we assume that the increase in population has been in the same ratio, and has been uniform throughout the city.

The number of dwellings in the city was about the same May 1, 1879, as in 1878.

The accompanying map shows the location of each district, the boundaries being indicated by red lines and the numbers by roman numerals. It also shows the location of each case of scarlet fever, diphtheria, and typhoid fever reported, and each fatal case (the characters used being explained in the lower right-hand corner), and the locations of sewers, which are represented by dotted lines.

The characteristics of each district may be briefly stated as follows:—

DISTRICT I. Includes the McLean Asylum, the filled basins of Miller's River, the filled clay pits near Oliver Street, the territory known as "Brick Bottom," and the thickly populated section near the Union Glass Works; also all the pork-packing and rendering establishments in the city. Area, about 337 acres. Soil, mostly clay. About three eighths vacant uplands and one eighth marsh. Population almost entirely foreign, living in small houses most of which are connected with sewers. The land is generally low, the greater part being not more than 13 feet above mean low tide. Number of dwellings, 1,006. Estimated population, 4,293; average to each dwelling, $4\frac{3}{10}$.

DISTRICT II. Embraces nearly all of East Somerville east of Cross Street, including Mt. Benedict. Area, about 107 acres. Soil, clayey gravel. General elevation, about 40 feet above mean low tide. Thickly populated almost entirely by native-born people, living in good houses nearly all of which are connected with sewers. Number of dwellings, 678. Estimated population, 4,189; average to each dwelling, $5\frac{2}{10}$.

DISTRICT III. Bounded by Washington Street, the Fitchburg

Railroad, Prospect Street, and the Cambridge line. Area, about 93 acres. Soil, chiefly clay. Land generally low and damp. Elevation, about 16 feet above mean low tide. About one half vacant land. Population principally native-born, living in good houses. Sewers are in most of the thickly settled streets. Number of dwellings, 285. Estimated population, 1,623; average to each dwelling, $5\frac{7}{10}$.

DISTRICT IV. Embraces all of the valley south of Somerville Avenue, and west of Mystic and Merriam Streets, except those parts in Districts I. and III.; and includes the American Tube Works and the Middlesex Bleachery. Area, about 171 acres. Soil, sandy. Land low and damp. Elevation, about 20 feet above mean low tide. About one eighth vacant land. Population more than one half foreign-born, living in small houses, the native-born people living in good houses. Most of the streets are provided with sewers, of which several were built in 1879. Number of dwellings, 499. Estimated population, 2,880; average to each dwelling, $5\frac{8}{10}$.

DISTRICT V. Includes Prospect Hill, Spring Hill, and the southerly slope of Central Hill, and extends from Medford Street to Willow Avenue, between Highland Avenue and Somerville Avenue. Area, about 361 acres. Soil, clayey gravel. Elevation, from 20 to 140 feet above mean low tide. About one third vacant land. Population almost entirely native-born, living in good houses. The thickly settled portions are generally provided with sewers. Number of dwellings, 814. Estimated population, 4,503; average to each dwelling, $5\frac{5}{10}$.

DISTRICT VI. Bounded by Highland Avenue, Willow Avenue, the Medford line, and Medford Street. Includes the city land and city buildings on Central Hill, the city farm, the Tufts brick-yard, the "Birch Pasture," "Polly Swamp," and the "Patch." The thickly settled parts are populated by foreign-born people, living in small houses with no sewers; the native-born people as a general rule live in good houses, with large lots of land. There are but three common sewers, accommodating but a very few houses. Area, about 285 acres. Soil in settled parts, clayey gravel. Elevation, from 35 to 115 feet above mean low tide. About three fourths vacant land. Number of dwellings, 255. Estimated population, 995; average to each dwelling, $3\frac{9}{10}$.

DISTRICT VII. Bounded by Medford Street, Broadway, and Cross Street, including a part of Winter Hill. Area, about 194 acres. Soil, clayey gravel. Elevation, from 35 to 140 feet above

mean low tide. About one third vacant land. The greater part is thickly populated by native-born people, in good houses. Most of the streets have sewers, several of which were built in 1879. Number of dwellings, 447. Estimated population, 2,461; average to each dwelling, $5\frac{5}{15}$.

DISTRICT VIII. Bounded by Broadway, the Medford line, Mystic River, the Boston line, Mystic Avenue, and the rear of lots on the west side of Austin Street. Includes "Convent Hill," Broadway Park, and "Ten Hills Farm." Area, about 482 acres. About one third is water and flats, one fifth marsh and one fourth vacant upland. In the settled parts the soil is clayey gravel, and the elevation from 10 to 145 feet above mean low tide. About one half of the people are native-born and live in good houses, those of foreign birth living in ordinary houses. The only sewers are in Mystic Avenue near the Boston line, and in portions of Broadway. Number of dwellings, 160. Estimated population, 733; average to each dwelling, $4\frac{6}{10}$.

DISTRICT IX. Includes the most thickly settled part of West Somerville, and extends from Willow Avenue to the rear of lots on the west side of Irving Street, including the "Powder House Farm." Area, about 174 acres. Soil, in parts sand and in other parts clay and clayey gravel. Elevation, about 40 feet above mean low tide. Population almost entirely native-born, in good houses. Sewers are in most of the streets. Number of dwellings, 273. Estimated population, 1,309; average to each dwelling, $4\frac{8}{10}$.

DISTRICT X. Includes College Hill and all of West Somerville, west of Irving and Meacham Streets; the greater part being a farming territory. Area, about 456 acres. Soil, chiefly clayey gravel. Elevation, from 10 to 122 feet above mean low tide; the settled part being high. Population, nearly all native-born, living in good houses. Sewers are in six streets, and they were all built in the fall and winter of 1879. Number of dwellings, 136. Estimated population, 576; average to each dwelling, $4\frac{2}{10}$.

Number of dwellings in the city, 4,553. Estimated population, 23,562; average to each dwelling, $5\frac{2}{10}$.

The following statistics are given in the four accompanying tables:—

First. Number of deaths in each district and in the entire city, with the rate per thousand of population, during the last six years, exclusive of deaths in the McLean Asylum for the insane.

Second. The five principal causes of death in Somerville in

1879, with the number of deaths from these causes and rate per thousand of population, in each district.

Third. Number of cases of scarlet fever, diphtheria, and typhoid fever in each district reported in 1879, with the number of these cases that have up to this date proved fatal, and the number per thousand of population.

Fourth. Nuisances abated in each district in 1879.

TABLE OF DEATHS IN EACH DISTRICT DURING THE LAST SIX YEARS, EXCLUSIVE OF DEATHS IN THE
MCLEAN ASYLUM.

Districts Population i, 1879.	I.		II.		III.		IV.		V.		VI.		VII.		VIII.		IX.		X.		Entire City.	
	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.	No. of deaths.	No. per 1,000 of population.
1874	147	37	53	14	24	16	86	33	67	16	34	37	26	11	17	25	18	15	3	8	475	22
1875	149	37	84	22	26	17	56	21	75	18	29	32	32	14	13	19	15	12	7	15	486	22
1876	113	30	62	17	17	12	62	24	78	20	23	26	25	12	11	17	25	22	10	20	426	21
1877	126	32	57	15	18	12	57	22	61	15	31	34	29	13	12	18	32	27	5	10	428	20
1878	92	22	50	12	32	21	53	19	53	12	24	25	32	14	15	21	17	14	7	13	375	17
1879	92	21	50	12	29	18	62	22	77	17	14	14	22	9	14	19	16	12	9	16	385	16
6 years	719	31	356	15	146	16	376	24	411	16	155	28	166	12	82	20	123	17	41	14	2,575	20

TABLE SHOWING THE FIVE PRINCIPAL CAUSES OF DEATH
IN SOMERVILLE IN 1879, WITH THE NUMBER AND RATE
IN EACH DISTRICT.

DISTRICTS.	CONSUMPTION.		DIPHThERIA.		PNEUMONIA.		HEART DISEASE.		CHOLERA INFANTUM.	
	No. of Deaths	No. per 1,000 of pop.	No. of Deaths	No. per 1,000 of pop.	No. of Deaths.	No. per 1,000 of pop.	No. of Deaths.	No. per 1,000 of pop.	No. of Deaths.	No. per 1,000 of pop.
I.	18	4.19	4	0.93	9	2.10	8	1.86	2	0.47
II.	7	1.67	. . .	. . .	3	0.72	5	1.10	4	0.95
III.	3	1.85	2	1.23	3	1.85	1	0.62	3	1.85
IV.	9	3.13	2	0.69	5	1.74	5	1.74	3	1.04
V.	13	2.89	10	2.22	4	0.89	4	0.89	4	0.89
VI.	3	3.02	. . .	. . .	1	1.01	. . .	. . .	3	3.02
VII.	4	1.63	2	0.81	. . .	. . .	1	0.40	1	0.40
VIII.	5	6.86	3	4.09	. . .	. . .	1	1.36		
IX.	3	2.29	4	3.06	2	1.52				
X.	2	3.47	2	3.47	1	1.74				
Total	67	2.84	29	1.23	28	1.19	25	1.06	20	0.85

TABLE OF SCARLET FEVER, DIPHThERIA, AND TYPHOID
FEVER IN EACH DISTRICT IN 1879.

DISTRICT.	SCARLET FEVER.				DIPHThERIA.				TYPHOID FEVER.			
	Cases reported.	Proved fatal.	Cases per 1,000 of pop.	Deaths per 1,000 of pop.	Cases reported.	Proved fatal.	Cases per 1,000 of pop.	Deaths per 1,000 of pop.	Cases reported.	Proved fatal.	Cases per 1,000 of pop.	Deaths per 1,000 of pop.
I. . . .	34	6	7.92	1.40	10	4	2.33	0.93	5	1	1.16	0.23
II. . . .	37	. . .	8.83	. . .	13	. . .	3.10	. . .	2	. . .	0.41	
III. . . .	14	1	8.63	0.62	8	2	4.93	1.23	1	. . .	0.61	
IV. . . .	22	2	7.99	0.69	5	2	1.77	0.69	2	1	0.69	0.35
V. . . .	31	3	6.88	0.67	33	9	7.33	2.00				
VI. . . .	5	. . .	5.03	. . .	3	. . .	3.02	. . .				
VII. . . .	15	2	6.09	0.81	22	2	8.94	0.81	1	1	0.41	0.41
VIII. . . .	6	. . .	8.19	. . .	8	3	10.91	4.09	3	. . .	4.09	
IX. . . .	6	. . .	4.58	. . .	9	3	6.87	2.29	1	. . .	0.76	
X. . . .	1	1	1.74	1.74	2	2	3.48	3.48				
Total . . .	171	15	7.26	0.64	113	27	4.79	1.15	15	3	0.64	0.13

NUISANCES ABATED IN EACH DISTRICT IN 1879.

District	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	Total
Population	4293	4189	1623	2880	4503	995	2461	733	1309	576	23562
Cellar damp	8	6	5	..	10	..	1	..	..	..	30
Cesspool defective . . . . .	..	2	..	1	1	..	..	..	1	..	5
“ offensive . . . . .	..	..	..	..	2	..	..	1	..	..	3
“ overflowing	2	..	..	..	4	..	..	3	1	4	14
“ under house offensive	2	..	..	..	..	..	..	..	..	..	2
“ under stable offensive . . . . .	..	..	..	..	..	..	..	..	1	..	1
Connections of waste with drain-pipes defective	7	10	8	2	7	3	2	1	4	..	44
Drainage defective	23	4	5	5	6	2	2	1	7	1	56
“ emptying in cellar	2	4	2	..	6	..	..	..	1	..	15
“ emptying on surface	30	..	4	14	11	9	9	9	1	1	88
Drain-pipe broken and leaking	1	6	2	..	4	..	..	2	..	..	15
“ in cellar defective	6	9	4	..	10	3	2	4	1	1	40
“ not trapped	4	1	..	..	3	1	1	1	..	..	11
“ stopped up	2	1	1	..	4	..	..	1	..	..	9
Dwelling rooms in basement low and damp	1	..	..	..	..	..	..	..	..	..	1
Filth in cellar	2	2	..	..	1	..	1	..	..	..	6
“ on premises	12	..	..	4	1	..	2	1	..	..	20
Garbage in street . . . . .	..	..	..	..	1	..	..	..	..	..	1
Hennery offensive . . . . .	..	1	..	..	..	..	1	..	..	..	2
Hens kept in cellar	3	..	..	..	1	..	1	..	..	..	5
Horse kept in house	1	..	..	..	..	..	..	..	..	..	1
Manure exposed	17	3	1	1	3	..	3	1	1	1	31
Manure-pit not properly constructed	2	..	..	..	..	..	..	..	..	..	2
Offal on land	1	3	..	..	1	..	3	..	1	1	10
Offensive materials carted through streets	1	..	..	..	..	..	..	..	..	..	1
Offensive odor in and around dwellings	13	2	2	..	3	18	3	..	3	..	44
Pig-pen offensive	1	..	..	..	..	..	..	..	..	..	1
Privy not properly constructed	2	..	..	1	2	..	..	..	..	..	5
Rendering, method of, defective	1	..	..	..	..	..	..	..	..	..	1
Slops thrown on surface	5	..	..	3	1	3	..	3	1	..	16
Soil-pipe not ventilated . . . . .	..	2	..	..	2	1	1	..	..	..	6
Stable filthy . . . . .	..	..	..	..	1	..	..	..	..	..	1
“ offensive	1	3	..	..	..	1	1	..	..	..	6
Stagnant water in house cellar	6	9	..	..	2	1	..	..	2	..	20
“ in stable cellar	3	..	..	..	..	1	..	..	..	..	4
“ on surface	17	..	..	..	2	..	3	..	1	..	23
Vault full	105	8	11	16	41	11	8	9	14	4	227
“ leaking	7	1	..	1	2	..	1	3	..	..	15
“ not properly constructed	11	4	2	..	8	5	1	1	6	..	38
“ not properly ventilated	2	..	..	..	2	..	1	..	5	2	12
“ offensive	9	4	4	12	3	2	2	..	6	1	43
Waste-pipes defective	4	2	3	1	4	1	..	..	..	2	17
“ not trapped	55	30	11	8	38	24	17	7	14	5	209
“ stopped up	2	..	..	..	3	..	..	..	1	..	6
Water-closet defective	1	9	1	1	13	1	..	..	1	1	28
“ insufficiently supplied with water . . . . .	..	1	..	..	..	2	..	..	..	..	3
Water-closet not supplied with water	1	..	..	..	6	..	..	..	..	..	7
Water-closet offensive . . . . .	..	9	..	1	4	..	..	1	..	..	15
“ stopped up . . . . .	..	..	1	..	1	..	..	..	..	..	2
Water-course obstructed . . . . .	..	..	..	5	..	..	..	..	..	..	5
“ polluted . . . . .	..	..	..	1	..	..	..	..	..	..	1
Wooden waste-pipes and drains	18	5	1	2	3	..	..	..	..	..	29
	391	141	68	79	217	89	66	49	73	24	1197

1879.

1879.

SCALE.

SHOWING HEALTH DISTRICTS.



Sewers shown thus:

Sewer Outlets,

Boundaries of Health Dists. —

REPORTED CASES, 1879.

Scarlet Fever Fatal cases, ..

Typhoid " " " " " "

Typhoid	....	□		63	.....	■
Dysentery	....	▲			.....	▲

STATEMENT OF THE APPROPRIATION AND EXPENDITURES
FOR HEALTH DEPARTMENT, 1879.

Appropriation,		\$2,700 00
Expended:		
For collecting offal,	\$980 00	
“ “ ashes,	977 19	
“ burying animals,	24 00	
“ abating nuisances,	38 75	
“ repairing culvert for water-course,	17 36	
“ fumigating,	57 00	
“ disinfectants,	5 95	
“ oil of peppermint,	36 00	
“ serving notices,	9 64	
“ carriage-hire,	22 00	
“ expenses at Woburn,	7 39	
“ books, stationery, and printing,	43 87	
“ advertising,	9 50	
“ postage stamps,	6 00	
“ map and plates for report of 1878,	50 22	
“ vials,	1 75	
“ salary of clerk,	100 00	
“ salary of inspector,	500 00	
	<hr/>	\$2,886 62
Excess of expenditures over appropriation,		<hr/> <hr/> \$186 62

In closing this report we wish to express our appreciation of the cordial aid and encouragement received from physicians of Somerville and vicinity; the assistance rendered us in many ways by the chief of police and his officers; and the faithfulness of the officers in our employ.

CHARLES W. SAWYER, *Chairman.*
GEO. A. KIMBALL, C. E.
JOHN F. COUCH, M. D.

PREVENTION OF DISEASE.

BY JOHN F. COUCH, CITY PHYSICIAN.

THE study of this subject involves a consideration of all of man's surroundings: the air he breathes, the water he drinks, the food he eats, the soil on which his house is built, the character and social condition of his neighbors, his occupation, hereditary influences, etc. For ages these subjects have received the attention of physicians, who have labored in the cause of sanitary reform with a zeal untainted by selfishness.

Until a comparatively recent period but little interest was shown in these subjects by the public; but at present the signs are encouraging. We find that reports of boards of health are sought for and read with interest. National, State, and city boards of health have been organized, and through them much valuable information has been given to the people. When the public shall have recognized the fact that some diseases are preventable, and that many others can by taking certain precautions be restricted in their spread, we can reasonably hope that great results will follow. But it must not be forgotten that with this knowledge there comes a corresponding obligation. The man who, with a knowledge of the result, exposes himself to the influence of any cause that eventuates in his death, is a suicide; and he who permits his neighbor's child to visit his house in which there is a contagious disease, is morally, if not legally, guilty of a great crime. If the child should contract the disease and die, he should be held responsible for its death. Each one of us is entitled to pure air and pure water; and it is absolutely essential to health that, in addition to these, the soil on which we live should be clean. It is the province of those who are engaged in the noble work of sanitary reform to point out to the people some of the many ways in which health may be impaired and disease engendered. Disease was once supposed to be inevitable, and was regarded as an evidence of divine displeasure. It is now well

known that man is himself responsible for many of the diseases with which he is afflicted, and that they are the result of a violation of laws established in the beginning. It matters not what position he holds in society, whoever violates these laws must pay the penalty.

That there is a great deal of unnecessary sickness in our city is susceptible of proof; and that by thoroughly carrying out the measures suggested in this paper, our death-rate will be materially reduced, is my earnest hope. By reference to the mortality table for 1879, it will be seen that there were 398 deaths in this city during the past 12 months. Of these 98 were due to "zymotic" diseases, and 67 to consumption. Of the principal "zymotics," diphtheria was the cause of 29 deaths, cholera infantum 20, scarlet fever 16, croup 6, and typhoid fever 3. The prevalence of these diseases in a city is considered by sanitarians as an evidence of the existence in that city of removable causes of disease. In the consideration of these diseases in the following pages, only such points will be alluded to as may have a practical bearing on prevention and restriction.*

SCARLET FEVER. — Medical writers of the present day are unanimous in the belief that this is a contagious disease. Of this there cannot be a reasonable doubt, — my own experience confirms it; and until the public realize the truth of this fact, we cannot hope to do much towards stamping it out. Recognizing the fact that this is a contagious disease, each individual in the community will feel that he is morally obliged to do all that he can to keep the disease from spreading. He will promptly notify the authorities of its existence in his own family, and will cheerfully carry out their suggestions. "Scarlet fever is the very type of what has always been, and still is regarded as a contagious and infectious malady." — Murchison, "London Lancet," October, 1864.

Mr. John Simon says, "Of this subtle and destructive contagion, we know of no other birthplace than the human body." Dr. Thomas, in Ziemssen's Cyclopædia, says, "In the large majority of cases, the poison can be proved to have emanated from sick persons; or we can at least trace its course with more or less certainty from these to the newly affected persons." And again, "It is indisputable that the *cause* of scarlatina is a peculiar substance which is transferable from the patient to the unaffected individual." Hillier writes, "The only known cause of the disease is contagion."

In the Fourth Annual Report of the State Board of Health of Michigan there is a paper by Dr. O. Marshall, of Lansing, on an epidemic of scarlet fever in Lansing, Mich., in 1875-76, from which I quote: "The centres of the disease were nearest to the centre of business, where the possibility of contact was greatest. The disease commenced on both sides of the river nearest to the public schools, and its extension outside of the city eastwardly was on the main travelled road. The evidence is strong in favor of contagion as being the first cause of the disease as it prevailed here. Eighty-three persons had scarlet fever following other cases in the same houses. Eighteen had the disease after visiting those sick, or where persons passed frequently from the sick to those who were well, in other houses. In two instances physicians had the disease in their own families after visiting many cases of scarlet fever. In three other instances there was a strong probability that the family physician had carried the disease in his clothes, hair, or breath, because of the remoteness of the cases from others who had scarlet fever, and no precautions having been taken to change his clothing immediately after visiting those who were sick with the disease. Seventeen persons had first symptoms in school, where it can be proven there were persons in attendance who had not fully recovered from scarlet fever. In the remaining thirty-seven cases the evidence of contagion is not so clear; but in a large proportion of them, on careful inquiry, the source can be traced with considerable certainty. Further evidence of the contagiousness of the disease might be found in the fact that where complete separation of the well from the sick was rigidly enforced, and every possibility of its being conveyed in clothing was prevented, none took the disease" Anything that has come in contact with an infected person may be the means of transporting the contagion of the disease, — air, food, clothing, sheets, blankets, furniture, toys, whiskers, hair, domestic animals, etc. Richardson believes that the poison is "thrown off by the lungs or skin, probably with epithelium." Thomas says there is "little doubt that the poison is present somewhere in the skin of the patient. It is probably also present in the pulmonary exhalations. Other secretions may also be the carriers of the contagion; as, for instance, the nasal and pharyngeal secretions, perhaps also the urine."

The following quotation illustrates the influence of contagion in spreading the disease: —

"A farmer living several miles from Woodstock, Vt., on a

by-road which was not a thoroughfare, had but a single neighbor. He visited, with his family, some friends at a town some twelve miles distant. Scarlatina existed in the families with whom he visited. After his return home, all his children (the precise number is not noted) had, in succession, scarlatina. The children of his only neighbor contracted it. Five children in these two families died with it. The cases were under the care of a physician living at Woodstock, distant some six or seven miles. Scarlatina did not previously exist in Woodstock. Shortly two children in the physician's family were attacked, and one died. A family in Woodstock was related to one of the families in which the disease first appeared, and the husband and wife watched one night with the children of their relatives. Shortly afterward their children were attacked. Communication with this family and the family of the physician was suspended throughout the village, and the only additional person affected was a boy who was exposed by going to the physician's house during the time his children were ill." — Flint, "Practice of Medicine."

The use of clothing worn by persons sick with the disease has frequently been the cause of its spread. In one instance "a child had died from scarlet fever. A relative of the family several miles away borrowed or bought a blanket and a coat, several weeks after the death of the child, to use for her own child; and in a few days, this last child was taken sick with the disease and died. It had been exposed to the contagion in no other way. The garments had been used about the first child while it was sick." A case is reported "where the dress of a child that had been sick with scarlet fever lay in a bureau drawer for eight months; this dress was sent to a relative twelve miles distant, and as the result, a fatal case of scarlet fever occurred in the family which received the clothing." "Maclagan saw a case in which the medium of communication was a woollen shawl, in which a scarlatinous patient had been wrapped. . . . According to Ogle, the contagion which gave rise to a case after the epidemic had subsided was spread by soiled linen. . . . V. Hil-denbrand, without the agency of scarlatinous surroundings, became infected by wearing a coat which had been worn formerly upon visits to scarlatinous patients, and had been stored away." Dr. Johnson, of Salem, cites several cases in which beds, lounges, carpets, and upholstered furniture were the means of spreading the disease: one was "where a carpet, removed from a house where the family

had had scarlet fever to another part of the town, communicated the disease to other children"; another in which his informant thinks the disease was contracted "by sleeping on a feather bed two months after it had been used by a previous patient. The bed had not been fumigated, but had been kept in the open air several days." — Massachusetts Board of Health, Ninth Annual Report. "V. Tschärner saw a case in which the medium was a piece of bedding. . . . Heslop calls attention to the necessity of separating the ordinary washing in a hospital from that which is infected, as he has seen a non-observance of this rule followed by a spread of scarlatina through the whole house, and has also seen it disappear as soon as this rule was obeyed." — Thomas. Examples of this kind might be multiplied; but enough has been said to prove that it is a contagious disease, that anything that has been used in the sick-room may be the means of spreading the contagion, that although some healthy individuals who visited persons sick with the disease escaped contracting it, they were the carriers of the contagion to others who did contract it.

A very dangerous belief is held by many people, that children must necessarily take the disease some time, and that consequently it is useless to attempt to check its spread among them. Although it is mainly a disease of childhood, it does not follow that all children must take it. On this point Thomas writes: "However, if the mortality from scarlatina is calculated at only six per cent, a very low figure, we find, as Murchison says, that the number of individuals attacked with scarlatina in England and Wales is considerably less than one half the births, so that consequently a large number of people must remain exempt and attain middle age without being protected by a previous attack. Observations of epidemics in isolated regions, where scarlatina seldom prevails, give the same results." Although it is not confined to any age, it will be seen by reference to the following figures, presented by Murchison, that by far the greater number of victims were under five years of age: In 148,829, he found that 9,999 were under one; 30,974 were under two; 95,070 under five; 38,591 were from five to ten; 8,676 from ten to fifteen; 3,871 from fifteen to twenty-five; 1,306 from twenty-five to thirty-five; at all ages above thirty-five, 1,315. Of the 16 deaths in this city in 1879, 14 were under 5. These figures confirm the medical opinion that the liability to contract the disease diminishes with the increasing years of childhood.

The First Report of the Board of Health contains many valuable

suggestions for the prevention and restriction of the disease. I shall briefly allude to the most important. The first and most important is the complete isolation of the patient from the rest of the household. This is absolutely necessary; and unless faithfully adhered to, other cases will probably follow. A room should be prepared for the patient, from which all unnecessary furniture and clothing should be removed. Into this room no one should be admitted except the nurse and physician. The nurse should be provided with cotton or linen wrappers for use in the sick-room. These should be laid aside, if at any time she passes from the patient's room into any other part of the house. Before leaving the room the hands should be washed in some disinfecting solution. Uneaten portions of food should be put with the slops, to which a liberal quantity of disinfecting fluid should be added. A tub containing disinfecting solutions should be in the room, into which all cloths, bed and body clothing, and towels, which require cleansing should first be put, after which they should be boiled for a couple of hours. Dishes, cups, and spoons, used by the patient, should be washed in a like solution before removal from the room. The discharges from the throat, nose, and mouth may be put in a vessel containing disinfectants. This vessel should be frequently washed with hot water. The discharges from the kidneys and bowels should be treated in the same manner. After recovery the patient should not mingle with other persons until all roughness of the skin has disappeared, and he has taken warm baths for several days. Our attention should now be directed to the room in which the patient was confined. It should be closed as tight as possible, particular attention being paid to the doors and windows. To an ordinary room (about ten feet long, ten feet wide, and ten feet high), one pound of sulphur will be sufficient. The sulphur, in powder or fragments, should be burned on live coals. To guard against fire, it would be advisable to place the coals in a pan of ashes. The room should remain closed for twenty-four hours, after which it should be thoroughly ventilated. The floor and wood-work should then be thoroughly washed with soap and hot water. Should a death occur, arrangements should be made for a private funeral. The body should be washed in a solution of chlorinated soda, and buried as soon as possible; and in no case should children be permitted to attend the funeral.

Complete isolation was insisted upon as the most important of the restrictive measures suggested. In the majority of families in

which scarlet fever appeared during the past year, it was not a practical measure. Let us take Mr. B.'s family as an example. It consists of himself, wife, and four children, the oldest six years old, and the youngest a nursing child. The two-year-old child was taken sick. They had but two rooms, one of which was used as a bedroom. The mother was the only nurse, and had to attend to the sick child, and the other members of the family as well. Isolation in the case of this family could not be carried out *at home*, and it were idle to suggest it. What is to be done when we meet with such cases? Believing as I do in the necessity of carrying out this measure, and also in the fact that its non-observance entails more sickness and suffering upon the poor than upon any other class in the community, I claim that it is the duty of our city government to provide a hospital in which this and other contagious diseases could be treated. In such an institution the patients would be placed under better hygienic conditions than at their homes, and have more constant medical attendance, thereby materially lessening the dangers of the disease.

The item of expense should not be considered in this connection. If we fail to provide a hospital for such cases, we shall continue to have them reported weekly. If it were necessary to discuss the question of the cost of such an institution, it could be shown that it would pay the city to possess one. Many of the victims of the disease are buried at the public expense, and fumigating the rooms is also paid for by the city. We should not look at Boston or New York or other large cities, and ask what they have done; but, knowing what we need, supply it. The following disinfectants are recommended:—

For cloths and clothes, and to put into vessels which are to receive slops or discharges of the patient, or to turn down water-closets and privies, eight ounces of sulphate of zinc and one ounce of carbolic acid dissolved in three gallons of water. For the hands, one or two drams of permanganate of potash in a pint of water; a little of this solution should be added to the water in which the hands are washed.

DIPHTHERIA.—There were 170 cases of diphtheria in Somerville in 1879, 29 of which proved fatal. Medical writers are not agreed as to the cause of this disease. While some lay special stress on its contagious character, others claim that it depends upon some condition of soil, filth and moisture, defective drainage, overcrowding, etc. The following quotations will probably fairly

represent medical opinion of the present day. In the report of an epidemic of diphtheria in Lowell, by Dr. Nickerson, and published in the Eighth Report of the Massachusetts Board of Health, I find the following : —

“ The facts which are here brought together form only a part of the evidence which goes to show that in diphtheria, whose ultimate origin is unknown, its manifestations, although often erratic, are reducible to certain laws. Admitting that the cause is external in the individual, which appears reasonable, it seems to me that confirmation of the idea that the atmosphere is a carrier of the poison is obtained in the fact that we have on record four deaths from diphtheria in infants, whose diet consisted exclusively of the mother’s milk. Of contagion, we have had such striking proofs that our physicians generally have testified their belief in it. . . . The favorite haunts of the Lowell epidemic have been low levels in the midst of more or less insanitary surroundings.”

In the same report there is a paper by Dr. Pinkham, of Lynn, on an epidemic of diphtheria in that city, in 1876. He says : —

“ Diphtheria has been more prevalent near marsh lands, in the valleys of brooks, and near bodies of water, where the soil and sub-soil are naturally damp, than at a distance from such localities. . . . Other things being equal, it has been more prevalent and relatively more fatal where air and soil have been polluted by house drainage, overflowing privies, decaying garbage, etc., than in places not subject to these conditions. It has presented in an eminent degree the characteristics of a contagious disease.”

Of diphtheria in Salem in the same year, Dr. Johnson says, “ The epidemic has been so wide-spread, and the failures to trace many cases to any contagion have been so numerous in the experience of our physicians, that we are led to conclude that, like the distemper which afflicted horses in the year 1873, it spreads through some unknown miasm. Not only the uncleanly sections of the city have been visited, but families whose surroundings seemed unexceptionable have suffered by this disease. Therefore we do not find the *source* of diphtheria in filth and insufficient sewerage ; but one cannot help thinking that it has found its *best nidus* in localities and among people whose hygienic conditions were unfavorable.” — Eighth Report Massachusetts Board of Health.

In the same report the board, commenting on the replies from their medical correspondents, say, “ So far as these replies are

concerned, the opinions of physicians agree, in the main, that the causes of the disease are in part telluric or meteorological, and at present unknown, and that it is contagious, infectious, and attended with the greatest mortality and severity where generally insanitary conditions, especially soil moisture and filth, prevail. Like all other diseases, it is prone to attack persons debilitated from any cause."

In the Sixth Report of the Michigan Board of Health I find the following remarks concerning the replies of medical correspondents relative to the cause of diphtheria: "Some of the evidence tends to the belief that among the elements in the causation or aggravation of the disease are insanitary conditions of cellars, privies, wells, or other surroundings of dwellings, and the location of dwellings on damp ground or near cesspools, privies, or swamps, etc. Indeed, the evidence of the frequent occurrence of diphtheria under such conditions, and of its aggravation by these conditions, is so strong as to make it a matter of common prudence that every householder and officer of health should assiduously guard against the occurrence of any of these conditions, and should earnestly work for their removal wherever or whenever they may chance to be present. Some, however, are inclined to believe that every case of diphtheria is derived from a previous case, through some source of contagion, known or unknown. Concerning the contagiousness of diphtheria, the weight of evidence in these communications is strongly in favor of the belief that the disease is contagious."

Mr. W. H. Brine, inspector of the Board of Health, made an examination of the houses in which occurred the seventy cases reported in 1878. There were but four reported as "good." There were "drain pipes broken," "improperly trapped," "not trapped," "clogged," "not trapped, emptying into cesspools." The cellars were "filthy," "damp," "damp and offensive." Privies were filthy, and in several instances were found within five and seven feet of the houses. Cesspools were "overflowing," etc.

Oertel, in Ziemssen's Cyclopædia, says, "The most important question in this whole chapter of etiology is that concerning *the relation of certain vegetable organisms to diphtheria*; whether their presence is determined by accident and by the existence of soil favorable to their growth, such as is found in the products of the disease, or whether they stand in a causal relation to the diphtheritic process. . . . Of the vegetable organisms which Cohn classi-

flies under the name of bacteria, and which he divides into four genera, with one or more species, there is one form in particular (the micrococcus) which penetrates the tissues wherever a diphtheritic disease occurs, but is also accompanied by a second form (bacterium termo) in greater or less numbers." After describing the different forms of vegetable parasites, and the manner in which they act upon the tissues of the body and upon the blood, he continues, "There can no longer be a doubt, after the statement of such facts, that these vegetable organisms are not of accidental occurrence, but are inseparable from the diphtheritic process, just as the bacteria of decomposition are necessarily connected with decay, and act as a ferment of it. *Without micrococci there can be no diphtheria* (Eberth)."

"At present the question of the etiology of diphtheria must be considered as *sub judice*, with enough probability in favor of the germ theory to warrant, on the part of the practical sanitarian, such measures of prevention as would probably be most efficacious if this theory were correct." — Billings, "Buck's Hygiene."

In the Fifth Annual Report of the Boston Board of Health I find the following summary of the results obtained from an inspection of the houses in which diphtheria occurred: "It thus appears, under the head of diphtheria, that nearly one half of the premises inspected (forty-seven per cent) presented nothing objectionable in point of drainage and general cleanliness; in thirty-nine per cent the drainage was defective; in the small proportion of three per cent the yards and cellars were dirty; and in the remaining eleven per cent sunken lots, stagnant water, or filthy dumps made the surroundings open to objection. . . . It is, then, our duty, in view of the concurrent testimony, to reject the idea that filth fosters the origin and distribution of diphtheria."

It will be seen from these quotations how prominent a part in sanitary conditions of man's surroundings play in the production and extension of this disease. Although it will be observed that in some instances the disease occurred where nothing objectionable could be found either in the house, the soil, or the condition of the family, there is a possibility that in these cases contagion was the cause.

Considering that the question of the primal cause of the disease is still an open one, it would not be wise for us to reject any of the testimony offered by these observers: it is all valuable, and from it we can derive many good suggestions. For my own part, I believe

that diphtheria is a specific disease, depending for its existence upon a previous case, and that insanitary conditions in themselves will not originate it. It is highly probable that the germs of the disease, which are said to exist in unusual quantities in the discharges of the patient, seek those localities which are noted for their poor hygienic surroundings.

It is not my purpose in this paper to enter into an examination of the probable manner in which these conditions favor the extension of the disease, — whether they act primarily in lowering the physical condition of those living under them, thus rendering them more liable to contract disease, or whether they present the necessary elements for the preservation and growth of the specific organisms which are said to be the cause of the disease; but, recognizing the fact that they bear an intimate relation to each other, I would impress on the people the necessity of carefully inquiring into the condition of their houses. Particular attention should be paid to the house drains; see that they are not leaky, and that they are properly trapped. Cellars should be kept dry and well ventilated, and at no time should decomposing vegetables or other substances be permitted to remain in them. The ground under and around the house should be well drained. Cesspools are dangerous nuisances, and should be removed as soon as possible. He is not a wise man who persists in using a cesspool when, by the expenditure of a few dollars, he could connect his house drainage with a public sewer.

The suggestions made when treating of scarlet fever are applicable to this disease, and should be faithfully carried out.

DIARRHŒAL DISEASES. — The diarrhœal group, under which term are included cholera morbus, dysentery, diarrhœa, and cholera infantum, occupies a prominent position in our mortality table. Of the 398 deaths in 1879, these diseases were the cause of 34. Cholera infantum was by far the most fatal of these diseases, standing credited with 20. As but 4 of the fatal cases in the group were adults, I shall confine myself to a consideration of the influences at work productive of these diseases in young children. Among the predisposing causes of diarrhœal diseases in children are mentioned poverty, overcrowding, impure air, improper food, and a high temperature. It will not be necessary to examine each one of these causes separately, for it will be seen that several of them are at present intimately related to each other. The poverty of the parents of these children necessitates their living in cheap

tenements, and, viewed from a sanitarian's standpoint, in the worst sections of the city. The rooms they occupy are small, and too few in number for the maintenance of health, and the inmates are exposed to all the evil influences of imperfect drainage, foul privies, cesspools, etc. In consequence of the inability of the head of the family to earn enough to support them, the mother often finds it necessary to lend her aid. To do this to advantage she must go out to work, and in the mean time the very young children are left practically to take care of themselves. It will be seen that under these circumstances, nursing children are brought under the influence of one of the causes, improper food. Nature's food for infants is the mother's milk, and no other aliment can take its place. Of this, in the case of the children of this class, they have but slight chance to partake, owing to the absence of the mothers. It is attempted to supply its place with various compounds from the nursing bottle, the use of which is one of the most prominent causes of these diseases. As we have at all seasons of the year many of these causes to contend with, and comparatively few cases of these diseases except in the summer months, we are naturally led to inquire as to the cause of their relatively larger number during the heated term. This leads us to a consideration of the influence of a high temperature. In the months of July, August, and September of the past year, the diarrhœal diseases were the cause of twenty-nine deaths, while during the other months there were but five deaths from these diseases. The influence of a high temperature is more apparent when we examine the mortality table for the whole State. Of 2,540 deaths from these diseases in 1878, 2,094 occurred in the months of July, August, and September. Aside from the debilitating influence of heat, to which children succumb more readily than adults, it brings into activity poisonous gases, resulting from the decomposition of organic matters in cesspools, privies, blocked drains, etc. Under the influence of a high temperature, these changes in organic matters take place very rapidly, and the air is laden with the poisonous effluvia to a greater extent in our summer months than at any other time in the year.

Of the influence of filth in the production of diarrhœal diseases, Simon says, " Nothing in medicine is more certain than the general meaning of high diarrhœal death-rates. The mucous membrane of the intestinal canal is the excreting surface to which nature directs all the accidental putridities which enter us. Whether they have

been breathed or drunk or eaten or sucked up into the blood from the surface of foul sores, or directly injected by the physiological experiments, it is there that they settle and act. As 'wine gets into the head,' so these agents get into the bowels. There, as their universal result, they tend to produce diarrhœa, — simple diarrhœa in the absence of specific infections; specific diarrhœa, when the ferments of cholera and typhoid fever are in operation. And any such distribution of diarrhœal diseases as has just been noticed, warrants a presumption — indeed, so far as I know, a practical certainty — that in the districts which suffer the high diarrhœal death-rate, the population either breathes or drinks a large amount of putrefying animal refuse."

Those children who are so unfortunate as to be deprived of the maternal milk are particularly liable to these diseases. Dr. J. L. Smith, in his work on diseases of children, speaking of the effects of heat and indigestible food on infants, says, "Infants upon whom both causes are operative are most liable to cholera infantum in its severe form. Hence, bottle-fed infants of the city are especially liable to it, and infants whose food is carelessly and improperly prepared." Milk is very liable to change when exposed to the atmosphere; and it is a well-known fact to medical writers, that the artificial food prepared for infants is open to the same objection. The results of a series of experiments conducted by Dr. Baginsky, for the purpose of ascertaining the degree of putrescibility of various kinds of food, are thus stated by Dr. Richardson: "After an exposure of these various articles of diet to a temperature of about 67°, for a period of twenty-four hours, he found that the human and the cow's milk remained almost unchanged; the Swiss milk, the two varieties of the farinaceous food and of the artificial food, although appearing still to be perfectly fresh and wholesome, yet exhibited on examination bacteria in motion. . . . After a further exposure of eighteen hours, the cow's milk and the Swiss milk were found to be coagulated, while the farinaceous and prepared foods were in a high state of putrefaction. The human milk, however, still gave an alkaline reaction, and appeared almost unchanged." — Fourth Report of Boston Board of Health. It will be seen from these experiments, the great superiority of the human milk over all other kinds of food. Next in order comes cow's milk, and then Swiss (condensed) milk; after these, the farinaceous foods.

The bacterial theory of diarrhœal infection is strongly main-

tained by eminent medical authority. Infusions of vegetable or animal substances become, in a short time after exposure to the air, turbid, and are found to contain an immense number of minute organisms called bacteria. The same infusions in sealed flasks which have been exposed to a high temperature undergo no change, owing to the destruction of the bacteria. These are the agents of decomposition, and without their presence there will be no change in organic matters. These organisms are found in immense numbers in air and water, and in decomposing substances they reproduce themselves with great rapidity. If the views already expressed are held in mind, it will be seen that the bacterial theory will readily account for the great prevalence of diarrhoeal diseases in the summer months and in sections of the city where insanitary conditions prevail. In such places are to be found all the conditions favorable to decomposition of organic substances; and it is highly probable that the artificial food prepared for infants in those places subject to atmospheric impurities from causes already named, has entered on the stage of decomposition before being used. Add to this the fact that without the greatest care being taken in washing bottles, tubes, etc., we shall have in them putrefying substances, which will lend their evil influence in bringing about this change. Taking this view of the cause of these diseases, it will be seen that something can be done to lessen their number. As impure air and improper food are the primal causes, our efforts must be directed toward the purifying of one, and diffusing among the people a knowledge of the danger attending the use of the other.

We should not wait until the heat of the summer is upon us before we begin to remove any or all the causes which render the air impure. We should carefully inquire into the condition of our privies, and see that their contents are frequently removed. Cess-pools and drains should be examined to see that there is no danger of their rendering the air impure. Cesspools at the best are necessary evils, and their use should be discontinued as soon as it is possible to connect the house-drainage with a public sewer. Mothers cannot be compelled to nurse their children; but it is hoped that when they fully understand the importance of their doing so, they will cheerfully supply the only proper food to their infants.

Although it is not possible to demonstrate beyond doubt the precise manner in which filth causes or predisposes to a certain class

of diseases, the presumption that it does so is further strengthened by the effects on health of an improvement in the sanitary condition of towns and cities. If we can show a diminution in the death-rate from diarrhœal diseases, diphtheria, typhoid fever, and consumption, the inference is plain, that in some way these diseases are intimately related to such conditions of our surroundings; there is no escape from such a conclusion. On the other hand, if it could be shown that in spite of all that had been done to introduce sewers, remove privies and cesspools and filth of all kinds, these diseases were as prevalent as formerly, our proposition would fall to the ground. But sufficient proof is at hand to warrant the belief that filth and disease are found together, and that by the removal of the former we materially diminish the prevalence of the latter. Dr. Buchanan instituted an inquiry as to the effects of sanitary improvements in certain English towns. These consisted mainly in measures for the removal of decomposing organic material, thereby rendering air and water purer, widening and cleaning streets, improving the conditions of lodging and tenement houses, improved sewerage, etc. The following results were noticed:—

Towns.	Death-rate before construction of works.	Death-rate after construction of works.	Reduction of Typhoid Fever per cent.	Reduction of Phthisis (Consumption) per cent.
Banbury	23.4	20.5	48	41
Cardiff	33.2	22.6	40	17
Croydon	23.7	18.6	63	17
Dover	22.6	20.9	36	20
Ely	23.9	20.5	56	47
Leicester	26.4	25.2	48	32
Macclesfield	29.8	23.7	48	31
Merthyr	33.2	26.2	60	11
Newport	31.8	21.6	36	32
Rugby	19.1	18.6	10	43
Salisbury	27.5	21.9	75	49
Warwick	22.7	21.0	52	19

The average reduction of typhoid-fever rate, almost one half, is a remarkable showing. It will be observed that the scourge of our New England States, consumption, was reduced in these towns about thirty per cent.

“Two hundred years ago the death-rate of London was 80 per thousand; under the influence of sanitary improvements, it has now been reduced to $21\frac{1}{2}$ per thousand, in spite of the enormous growth of the town and the great crowding to which many of its people are still subjected.” — Waring, “Sanitary Drainage of Houses and Towns”

“It is a well-settled fact that in localities where drainage has from any cause been imperfect, the people are more or less affected with fevers and diseases of a kindred character; but where ample drainage is afforded, it is evident that the disease subsides with the extension of drainage.” — Dr. Lyster, article on “Influence of Drainage,” Third Report State Board of Health of Michigan.

Dr. Brownell, of Utica, Macomb County, writes:—

“Malarial diseases here have been gradually diminishing. I have seen the time when full seventy-five per cent of all sickness had its origin in malaria. This change is due, in my judgment, in no small degree, to the artificial drainage which has been carried out in this portion of the State. I am fully convinced, from the experience and observation obtained during twenty-two years’ practice in the profession of medicine, in a locality where artificial drainage was and is largely necessary in order that the land should be fit for agricultural purposes, that the authorities and people have been and will be amply repaid for all the trouble and expense in the work of drainage, by the good that has grown, and will continue to grow out of it, to the public health alone.” — Second Report Michigan Board of Health.

Commenting on the report for the quarter ending December, 1857, of the Registrar-General of England, Dr. Beale says:—

“As an instance of the saving of life which has been caused by the progress of civilization and of hygiene, we may mention London; the annual mortality of which, two centuries ago, was 50 per thousand, its inhabitants living only 20 years on an average.

“The yearly death-rate was

	Per thousand.
1660 to 1679	80
1681 to 1690	42.1

	Per Thousand.
1746 to 1755	35.5
1846 to 1855	24.9
1871	22.6

“The annual death-rate is now only 24 per thousand, and the mean duration of life 42 years. Even within the past few years, a great decline has taken place in the death-rate of many places in England, which have had the *benefit of sanitary improvements.*”

“When the improvement of sewerage was actively undertaken in London some twenty-five years ago, it was found that the death-rate was so much reduced in some of the worst quarters of the town, that if the same reduction could be made universal, the annual deaths would be 25,000 less in London, and 177,000 less in England and Wales; or by another view, that the average age at death would be 48, instead of 21 as it then was.”—Waring, “Sanitary Drainage of Houses and Towns.”

In the report of the Staten Island Improvement Commission (1871), it is stated that where the foundations of the dwelling and the land about it for a certain space have been thoroughly under-drained, and where considerable foliage interposes between such space and any exterior source of malaria, the liability to disease is greatly reduced, and there is little danger that fever and ague would be contracted by the inmates of such a house, except by exposure outside their own house. . . . Pulmonary diseases especially the early stages of consumption; all continual fevers, especially typhoid fever and uterine diseases, both of tissue and of function, are stated by the Staten Island Commission to become less severe with the natural or artificial reduction of the level of the ground moisture.” — *Ibid.*

The late Dr. George Derby (First Annual Report Massachusetts Board of Health) wrote:—

“There is much in the records of consumption in Massachusetts during the past few years to encourage the hope that private and public hygiene are already anticipating and averting its ravages. . . . Comparing the first group of five years with the last group of five years, it is seen that the annual gain in each 100,000 of the population is 54 lives. This gives as the actual saving of life in the last five years 3,440 persons, or 688 in each year.”

The diminution of the consumption death-rate in the twelve English towns already referred to, subsequent to the improvements

in their sewerage, taken in connection with the statements of Dr. Derby, and a host of other instances of a like nature, seem to confirm the proposition of Dr. Bowditch, that "a residence on or near damp soil, whether that dampness be inherent in the soil itself, or caused by percolation from adjacent ponds, rivers, meadows, marshes, or springy soils, is one of the primal causes of consumption in Massachusetts, probably in New England, and possibly in other portions of the globe. Consumption can be checked in its career, and possibly, nay, probably prevented, in some instances, by attention to this law."

It will be seen from these extracts from the writings of men well qualified to judge, that in cities, sanitary improvements result in a diminution of their death-rates; that attention to the sanitary condition of towns, more particularly to the condition of privies and cesspools, and instituting measures for subsoil drainage, is attended by a gratifying diminution of typhoid fever and consumption; and that as we recognize the law of contagion, the diminution of small-pox, scarlet fever, and diphtheria will be observed.

SMALL-POX. VACCINATION. — At the present time these subjects are receiving more than the usual amount of attention. The reappearance of small-pox in this country, and the opposition to vaccination in some parts of Germany and England, seem to me sufficient reason for devoting a little space to their consideration. It is claimed that vaccination is the cause of many skin diseases, scrofula, cancer, and even death. In standard medical works allusion is made to the fact that when the vaccine vesicles are fully formed, an eruption occasionally makes its appearance on some portions of the body of the child; but it is of short duration, and the child afterwards enjoys its previous good health. In the case of scrofulous children in whom the disease had not previously shown itself, it would be unjust to regard vaccination as its cause. There is no well-attested case on record of a healthy child, vaccinated with pure vaccine virus, developing any blood disease after its performance. As a means of preventing the spread of small-pox in a community, the importance of vaccination cannot be overestimated. It is a noticeable fact that in the present century there have been, in each epidemic of small-pox, a relatively larger number of mild cases of that disease (varioid) than there were previous to the introduction of vaccination. A glance at the history of small-pox in the eighteenth century, and a comparison with the epidemics of that disease in the present century, will show the very great

value of vaccination. "In England, in the seventeenth and eighteenth centuries, seven to nine per cent of all deaths were attributable to small-pox." — Ziemssen. Out of every 1,000 deaths in England in the half-century from 1750 to 1800, there were 96 deaths from small-pox, and of every 1,000 in the half-century from 1800 to 1850 (since the introduction of vaccination) there were only 35 deaths. As stated by Aitkens, there were during 91 years previous to *inoculation* (the insertion of small-pox virus into some part of the body) 65 distinct and well-marked epidemics of small-pox, which is equal to a ratio of 71.4 epidemics in 100 years. In 63 years during the practice of *inoculation* there were 53 epidemics, a ratio of 84 in 100 years. In 55 years since the introduction of vaccination, there were only 12 epidemics of small-pox, a ratio of 24 in 100 years. In England and Wales, at the end of the last century, 3,000 per million of the population died annually of small-pox, while the average yearly deaths from 1841 to 1853 from this disease were 374, and in the succeeding 10 years the average fell to 171. Vaccination was introduced into Sweden in 1801, and was made compulsory in 1810. In the 15 succeeding years, small-pox entirely disappeared. During the 12 preceding years upwards of 3,000 persons died of the disease in Copenhagen. Previous to the introduction of vaccination into Sweden the annual death-rate from small-pox was 2,050 for every million of its inhabitants. The early history of small pox in America shows the fearful ravages of this disease in unprotected communities. There was no small-pox in America previous to its discovery by Columbus. It was brought from Europe, and in 1517 the disease first made its appearance in San Domingo. A few years later, in one of the Spanish expeditions from Cuba to Mexico, a negro who was covered with the pustules of small-pox was landed on the Mexican coast. The disease spread from him; and in a very short time, according to Robertson, three and one half millions of the people died from the disease in that country. It was introduced into Iceland in 1707, when 16,000 persons — more than a fourth of the population — fell victims to the disease.

As showing the protective property of *recent* vaccination, one instance may be cited: "Among 10,000 children vaccinated at Brussels from 1865 to 1871, and living afterwards amidst the terrible epidemic which raged there in 1870 and 1871, there is not known a single instance of an attack of small-pox."

When vaccination was first introduced, it was claimed by its

advocates that it was a sure preventive of small-pox. But this claim was not well founded, for vaccinated persons have taken the disease when it prevailed as an epidemic. Its protective influence diminishes after a certain number of years, and the consequent necessity for revaccination has been recognized and insisted on by the profession. The length of time during which vaccination protects the individual is variously estimated at from eight to twelve years. This should be borne in mind when the disease is prevailing as an epidemic, and all persons who have not been vaccinated within twelve years should be revaccinated. It is generally believed by the medical profession that in vaccination and revaccination we have the means of prevention of that loathsome disease, small-pox.

TYPHOID FEVER. — The production of this disease is considered by some writers to be due to the presence of a “germ,” derived from the body of a person sick with the disease. These “germs” pass off from the patient in the discharges from the bowels, and, thrown into privies, enter the system through the use of well-water which has been contaminated by them. The air is also credited with being the carrier of this poison, and persons exposed to the exhalations from privies which have received the dejections from typhoid patients are liable to take the disease. Liebermeister says, “In general we can say that the disposition of any locality to an epidemic of typhoid fever depends largely upon the extent to which the inhabitants breathe or drink the contents of their privies. The greater the chances of this are, so much the greater are the probabilities that the introduction of an imported case of typhoid will produce an epidemic.”

Other writers, while not denying the “germ” theory, claim that the disease is frequently caused by the use of drinking water made foul by the decomposition of organic matter, vegetable or animal, by the air loaded with exhalations from foul privies, cesspools, manure heaps, obstructed drains, etc. The late Dr. George Derby, in the Second Annual Report of the Massachusetts Board of Health, says, “The single continuous thread of probability which we have been able to follow in this inquiry leads uniformly to the *decomposition of organized* (and chiefly vegetable) *substances*, as the cause of typhoid fever as it occurs in Massachusetts.”

The following account of an epidemic of typhoid fever due to the use of contaminated drinking water is taken from Waring’s work on “Sanitary Drainage, etc.”: —

“There has recently been an investigation into the origin of an outbreak of typhoid fever in Over Darwen, England, the origin of which for a long time eluded the careful search of the authorities. It was finally worked out by a sanitary officer dispatched from London. The first case was an imported one, occurring in a house at a considerable distance from the town. The patient had contracted the disease, came home, and died with it. On first inquiry it was stated that the town derived its water supply from a distance, and that the water was brought by covered channels and could not possibly have been polluted by the excreta from this case. Further examination showed that the drain of the closet into which the excreta of this patient were passed, emptied itself through channels used for the irrigation of a neighboring field. *The water main of the town passed through this field*; and although special precautions had been taken to prevent any infiltration of sewage into the main, it was found that the concrete had sprung a leak, and allowed the contents of the drain to be sucked freely into the water pipe. The poison was regularly thrown down the drain, and as regularly passed into the water main of the town. This outbreak had a ferocity that attracted universal attention; within a very short period, 2,035 people were attacked, and 104 died.”

Liebermeister gives the following account of an epidemic due to the use of water infected with the poison of the disease:—

“EPIDEMIC IN SOLOTHURN IN 1865. — In a locality supplied by a certain aqueduct during the period between Aug. 15 and Sept. 15, a number of persons were attacked with typhoid fever; 82 of these cases are classified with their names. Almost all the houses supplied with water from this aqueduct contained cases of typhoid; while other houses near and between these, but with a different water supply, escaped entirely. In the barracks which were supplied from the aqueduct, numerous cadets and instructors, collected from ten different cantons, were attacked with the disease. The disease commenced fourteen days after their moving into the barracks; in eleven days 32 were attacked, and the school being then given up, after its dismissal 10 more were attacked. Out of 100 persons, 42 were attacked with severe typhoid, and 8 died. At the same time the disease appeared among the other dwellers in the barracks, although before that time there had never been a case of typhoid there. It was found on examination that a brook which passed through the court of the lunatic asylum Rosegg, and

received its sewerage, ran into the aqueduct. In the asylum was a nurse who had recently come from a typhoid locality. This woman was taken sick with typhoid fever about the middle of July, and died Aug. 8. The clothes of this patient were washed in the wash-house of the asylum by order of the director, and many soiled clothes were even soaked in the brook itself. After the middle of August the epidemic appeared throughout the entire locality supplied by the aqueduct."

In the paper on typhoid fever in Massachusetts, by the late Dr. Derby, and already referred to, are to be found the views of the leading medical men of the State. A few of these will suffice for my present purpose. One correspondent says, "We may consider the practical facts presented in this connection to be these: that quantities of decomposing matter, whether from pigsties, privies, vegetables in cellars, or *decomposing leaves of newly cleared land*, combined with *dampness* and *deficient ventilation*, may be among the causes of typhoid fever." Another writes, "Whenever I have had several cases of typhoid fever in one house or neighborhood, I have usually found what I considered the cause, — either a wet cellar with decaying vegetables, or a sink-drain running into a pool near the house for the purpose of making compost." Another says, "According to my observation, *putrid air* from decaying vegetable matter and foul sink-drains, with poorly ventilated sleeping-rooms, constitute the most frequent cause of typhoid fever." Murchison gives several instances of outbreaks of typhoid, when, in his opinion, there had been no previous pollution of air or water with the dejections of fever patients. He claims that the spontaneous origin of these cases in emanations from sewers, and in contaminated drinking water, was proved to a certainty. The practical lesson to be derived from these extracts is, in my opinion, that we should carefully guard our water supply from all possible sources of contamination, and remove from our midst as soon as possible the contents of our privies. Whichever theory of the disease we accept, — the "germ" theory or the spontaneous origin of the disease, — we are forced to the conclusion that we have it in our power to prevent the disease. Granting the truth of the "germ" theory, if proper precautions are taken to disinfect the discharges from the bowels, before they are thrown into water-closets or privies, it will not be possible for them to cause the production of another case. If we accept the spontaneous origin of the disease from decomposing animal or vegetable

substances, the mode of prevention will suggest itself to all thoughtful persons.

It has been demonstrated that man is an active agent in the production of disease, and that it is possible to remove many of its causes and lessen its prevalence by an observance of well-known laws. But many persons die yearly who are not responsible for the diseases of which they die. The parents of these persons were the subjects of disease, the tendency to which was transmitted to their offspring through the influence of heredity. Many of the deaths ascribed to such causes as teething, convulsions, diarrhœal diseases, marasmus, etc., are of children born with impaired organizations or with a tendency to disease derived from their parents.

Prominent among the diseases that are transmitted through the influence of heredity are consumption, syphilis, scrofula, and insanity. Consumption is regarded by medical and non-medical writers as a disease that is frequently transmitted through the influence of heredity; yet despite this knowledge, we frequently see persons who are subjects of that disease, and apparently without any thought of the result, marrying. In the Fourth Annual Report of the Massachusetts Board of Health there is an instructive paper by Dr. Bowditch on some of the "Causes or Antecedents of Consumption." It contains a series of questions sent to the medical correspondents of the board, and the replies received. He says that in answer to the question, "Is consumption caused or promoted by hereditary influences?" two hundred and five correspondents replied in the affirmative, one in the negative, and four did not reply. Commenting on these replies he says, "Coming, as these returns do, not from theorists, but from physicians who see families grow up and die under their own care, this result, though perhaps not unexpected by some readers, — certainly not by myself, — is very significant. If we can ever have faith in medical testimony, every parent — and still more, every one preparing by marriage to become a parent — should consider himself as forewarned by the above table. Still further, will not the State feel obliged at some future time to restrain the marriage of persons liable to breed consumption, even if it be considered improper and contrary to liberty at present to interfere with or prevent any such marriage, however inevitably it may be destined to produce a consumptive, wretched progeny?" When we consider how frequently the features, the form of the body, the tone of the voice, the expression

of the eyes, and the mental traits of the parents are reproduced in their children, it will no longer be a matter of surprise that certain diseases, or the predisposition to them, are transmitted from parents to their offspring.

The records of insane asylums prove that insanity, in fully one half of the cases, may be traced directly or indirectly to hereditary influences. It is not possible to arrive at a proper estimate of the number of insane persons at large in the State; but the fact that there are a great many who are not inmates of insane asylums cannot be disproved. They are not considered by their friends as in need of special treatment, and possibly will consider themselves at liberty to marry. Many families carefully guard from the world the fact that there is one among them who is not of sound mind. If in such cases certain "eccentricities of character" are commented on, they are passed over as of no account. Such persons, marrying, beget children who will probably, after arriving at the age of manhood or womanhood, develop insanity, or some of the many varieties of nervous diseases, such as hysteria, epilepsy, paralysis, etc.

Certain forms of intemperance are now regarded by eminent medical authority as diseased states of the mind, and as such can be transmitted from parents to offspring. The continued habitual indulgence in alcoholic stimulants produces a change in the structure of the cerebral substance, and as a result there is transmitted to the offspring an almost irresistible craving for such stimulants. By many physicians these cases of "dipsomania" are regarded as evidence of insanity in the individuals thus affected. From a paper on "Insane Drunkards," read by Dr. Fisher, of Boston, before the Massachusetts Medical Society, in June, 1879, I quote: "Dr. Austie states that habitual drunkenness in one generation may become dipsomania in the next. The belief in dipsomania as a definite form of insanity, however caused, is universal, as far as I know, among authorities in lunacy. . . . Dr. Ray follows Esquirol in classing dipsomania as a partial moral mania. . . . Dr. Sankey, following the example of many writers, traces the close parallel between the gradual degeneration of brain and degradation of mind in the drunkard and the insane person. These processes exactly correspond in some cases, and the cerebral changes are almost identical." Dr. Hitchcock, president of the Michigan Board of Health, in an address on "Heredity in its Relations to Public Health," quotes Carpenter as follows: "There is one class of cases,

moreover, in which a particular abnormal form of nutrition that is distinctly *acquired* by the *individual* exerts a most injurious influence upon the offspring; that, namely, which is the result of such habitual alcoholic excess as *modifies the nutrition* of the nervous system. . . . We have a far larger experience of the results of habitual alcoholic excess than we have in regard to any other nerve stimulant, and all such experience is decidedly in favor of the *hereditary transmission* of that acquired *perversion* of the normal nutrition, which it has engendered in the individual. That this manifests itself sometimes in congenital idiocy, sometimes in a predisposition to insanity, which requires but a very slight exciting cause to develop it, and sometimes in a strong craving for alcoholic drinks, which the unhappy subject of it strives in vain to resist, is the concurrent testimony of all who have directed their attention to the inquiry." Ribot says, "The passion known as dipsomania or alcoholism is so frequently transmitted that all are agreed in considering its heredity as the rule." It will be seen from these quotations that the drunkard not only injures himself, but becomes the progenitor of others who enter the world with diseased organisms, and who eventually become either drunkards of the most hopeless class, or else lapse into idiocy or insanity, and are striking examples of intellectual and moral degeneration.

It is an interesting question, to what extent the State can interfere, if at all, in the prevention of hereditary diseases. At the present day, any attempt in this direction would meet with strong opposition from the masses of the people. But when the fact is understood that persons afflicted with these diseases may be the means of bringing into the world others who will be a cost to the State, and who will themselves beget others who will not only develop the same diseases, but may possibly become criminals, then will an enlightened public sentiment sustain such an interference. It is to be hoped that the day is not far distant when persons who are consumptive, or in whom there is evidence of insanity, will not be permitted to marry; when ministers of the gospel will require of those about to enter the married state, a certificate of good health from a physician; when habitual drunkards will be under the constant supervision of the State; when the present system of three and six months' imprisonment in some jail, of such persons, shall be a thing of the past, and in its stead a detention in some asylum until there is evidence of cure. Then, and not till then, can we hope for the "survival of the fittest" physically, — may

we not say mentally? As a member of the Board of Health, I am conscious of the fact that just in proportion as people understand the danger to health attending certain conditions under their own control, just in that proportion they are willing to listen to and carry out our suggestions; but when they are ignorant of these relations, we find that they do not readily adopt our suggestions. This class of people "can't see how an untrapped drain emptying into a sewer can cause disease," and we are occasionally told by them that "we are perfectly satisfied to take the risk." Having these people in mind, it was thought that such a paper as this might be the means of bringing about in their minds a desirable change, which would result in their anticipating a visit from the health authorities, by removing from their midst such preventable causes of disease as existed there. There is no claim to originality in this paper, nor was its production undertaken because of any supposed special fitness for the task. I have felt that it would be better to present the views of leading medical men than my own unsupported testimony. The good of the community was regarded in its production; and if it result in the saving of one life from a "preventable disease," I shall feel repaid for my work.

REPORT OF THE CITY PHYSICIAN.

CITY PHYSICIAN'S OFFICE, 17 BOW STREET,
Jan. 1, 1880.

To his Honor the Mayor and City Council :

GENTLEMEN, — I have the honor to present the following report of the work performed by me, during the six months ending Dec. 31, 1879 : —

I was appointed city physician July 1, 1879, and entered at once upon the duties of the office.

Most of my patients were seen at their homes. I have made 773 medical and 19 surgical visits to patients who were unable to come to see me. I have been consulted 60 times in my office. Three surgical visits were made to the police station. Eight obstetric cases were attended. I have vaccinated 28 children whose parents desired to send them to school. I have given 15 certificates of vaccination to children, for their admission to school. 12 persons had teeth extracted in my office.

I have viewed the bodies of three persons who died, and given certificates of the probable causes of death. The physicians who had attended them were absent from the city. The Massachusetts Legislature of 1879 passed a law which requires two physicians to examine and give a certificate, stating their reasons for declaring that the person whom they have seen is a fit subject for an insane asylum. As the law provided, I have examined eight persons, and signed seven certificates. All sick people do not need medicine, but they do require good nourishment, and in certain seasons of the year, warm rooms. Our Board of Overseers of the Poor will not let any sick person suffer for the want of either if they can help it, but they are not always to be found readily. They meet but once a week, and they reside in different sections of the city. During the past six months I have been called professionally to several cases where the people were entirely dependent on their neighbors for food and fuel. The supply under these circumstances was intermittent, and the sick ones suffered in consequence. Such cases

need immediate attention, and I think that the city physician should have the power to order for them whatever he may think necessary. In the mean time, the cases would be reported to the Overseers of the Poor as usual, for investigation.

Respectfully submitted,

JOHN F. COUCH, M. D.,

City Physician.

MEMBERS OF THE BOARD OF HEALTH OF 1879.

CHARLES W. SAWYER, *Chairman.*

GEORGE A. KIMBALL.

JOHN F. COUCH, M. D.

CLERK.

GEORGE I. VINCENT.

INSPECTOR.

WILLIAM H. BRINE, 40 Houghton Street.

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REPORT

OF THE

COMMITTEE ON FIRE DEPARTMENT.

CITY OF SOMERVILLE.

IN BOARD OF ALDERMEN, Jan. 3, 1880.

Report accepted, and referred to the next city government, to be printed in the Annual Reports for the year 1879, and sent down for concurrence.

CHARLES E. GILMAN, *Clerk*.

IN COMMON COUNCIL, Jan. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk*

CITY OF SOMERVILLE.

To his Honor the Mayor and the City Council :

GENTLEMEN, — The following report contains a statement of the operations of the Fire Department during the year 1879 ; the condition of the apparatus and buildings connected with the department ; the number of fires and alarms, with the cause thereof ; the loss by fire, and the insurance thereon ; and an approximate estimate of the value of property on fire.

FIRES AND ALARMS.

The number of fires and alarms of fire during the year has been 28.

LOSS AND INSURANCE.

The total loss by fire during the year 1879 was —

Loss,	\$3,490 00
Insurance,	25,200 00
Value of property on fire,	50,140 00

A comparison of the loss with former years is as follows : —

1872,	\$6,375 00
1873,	11,290 00
1874,	9,085 00
1875,	8,860 00
1876,	13,390 00
1877,	42,383 00
1878,	669,945 00
1879,	3,490 00

It will be seen by the above table that the loss was less in 1879 than in any year since Somerville became a city.

The following are the several causes by which the fires and alarms originated : —

Incendiary,	5
Defective fireplace,	4
Accidental,	2
Unknown,	1
Thawing water pipe,	1
Defective stove pipe,	1
Children playing with matches,	1
Tar barrel,	1
Rags on furnace,	1
Burning of corned beef,	2
Fire-crackers,	2
Breaking of kerosene lamp,	2
Carelessness with matches,	1
False alarms,	2
Fire in Cambridge,	1
Fire in Medford,	1
	<hr/>
	28

MANUAL FORCE.

The manual force of the department consists of 71 men, as follows : —

1 Chief Engineer,	1
1 Assistant Engineer,	1
1 Steamer company of 14 men,	14
4 Hose companies of ten men each,	40
1 Hook and ladder company of 15 men,	15
	<hr/>
	71

APPARATUS.

The fire apparatus consists of 1 steam fire engine, 4 hose carriages, and 1 hook and ladder carriage ; there is also 1 relief hose carriage, and 1 relief hook and ladder carriage.

HOSE.

There is now in the department 8,000 feet of hose ; 4,050 feet is good and the balance is not reliable.

FIRE-ALARM TELEGRAPH.

The fire-alarm telegraph now consists of about 20 miles of wire, 5 bell strikers, 25 boxes, 7 gongs ; and is run by a battery of 145 cups. The work of taking care of this apparatus has been done by the men stationed at the steamer house, without any extra expense to the city. How well it has been done the telegraph itself speaks, it having never in a single instance failed to designate the location of a fire. I deem it proper to suggest that 3 new boxes be placed in districts now remote from any box, that all may enjoy its benefits in time of need.

TELEPHONE.

This department has the care of the telephone line owned by the city, consisting of 7 stations and 4 miles of wire.

BUILDINGS.

Most of the buildings used by the department are in good condition, and the expense in keeping them so will not be large. The stable used by Hose No. 3 and Hook and Ladder No. 1 is an exception. This stable is old and decayed, and unsafe for heavy horses. I recommend that a new stable be built of brick. As this is the principal item of expense to be called for, I hope it will receive favorable consideration.

During the past year, under the direction of the Committee on Fire Department, the house of Hose No. 1 has been rebuilt ; this work was a matter of necessity. It will, however, answer all requirements for many years.

In closing this report, I desire to express my grateful thanks to his Honor the Mayor, the Committee on Fire Department, and to the gentlemen of the City Council, for their co-operation in all matters pertaining to the efficiency of the department.

The officers and members of this department will please accept my heartfelt thanks for the zeal displayed by them in extinguishing fires, and for their excellent conduct as firemen.

JAMES R. HOPKINS,
Chief of Fire Department.

REPORT

OF THE

COMMITTEE ON STREET WATERING.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Jan. 3, 1880.

Report accepted. Referred to the next city government, to be printed in the Annual Report of 1879. Sent down for concurrence.

CHARLES E. GILMAN, *Clerk.*

IN COMMON COUNCIL, Jan. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk.*

CITY OF SOMERVILLE.

YOUR committee beg leave to make the following report of their transactions for the past year : —

Whole amount expended for labor, repairs, etc.	\$2,525 65
To city of Boston for water,	1,134 00
	<hr/>
	\$3,659 65
Amount received from abutters as their proportion of the expense,	<hr/>
	2,131 40
Balance as cost to the city,	<hr/>
	\$1,528 25
	<hr/>

J. J. UNDERHILL,
Chairman.

REPORT

OF THE

COMMITTEE ON FINANCE.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Jan. 3, 1880.

Report accepted. Referred to the next city government, to be printed in the Annual Report for the year 1879. Sent down for concurrence.

CHARLES E. GILMAN, *Clerk*.

IN COMMON COUNCIL, Jan. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk*.

CITY OF SOMERVILLE.

IN COMMITTEE ON FINANCE, Jan. 3, 1880.

THE Committee on Finance herewith present the report of Robert L. Spear, Esq., on the examination of the books and accounts of the city treasurer and collector of taxes for the year 1878.

As this report is the last to be made by Mr. Spear, the work which he was employed to do having been fully completed, the committee deem it their duty to say that in their judgment he has been most thorough and minute in his examination, bringing to the investigation the skill of a most accomplished accountant; and your committee deem it their duty further to say that the result of this examination shows that the books and accounts of the treasurer have been kept in the most systematic and careful manner from the first entry therein until the last covered by this investigation; and that, in the language of Mr. Spear's report, "everything furnishes proof of an honest administration of the duties and trusts pertaining to his office." It is a matter of congratulation that our city has so long possessed the services of a careful, painstaking, systematic, and upright public servant in the person of our city treasurer.

O. J. DAVIS,
S. H. LIBBY,
E. GLINES,
R. M. BALDWIN,
MALCOLM B. COLE,
JOHN E. HILL,
JOSEPH A. CHABOT,

Committee on Finance.



REPORT
OF THE
COMMITTEE ON FUEL AND STREET LIGHTS.

CITY OF SOMERVILLE.

IN BOARD OF MAYOR AND ALDERMEN, Jan. 3, 1880.

Report accepted Referred to the next city government, to be printed in the Annual Reports of 1879, and sent down for concurrence.

CHARLES E. GILMAN, *City Clerk*.

IN COMMON COUNCIL, Jan. 3, 1880.

Concurred in.

DOUGLAS FRAZAR, *Clerk*.

CITY OF SOMERVILLE.

Your committee beg leave to make the following report of their transactions in the past year : —

Amount of appropriation,	\$7,500 00
“ “ expenses,	6,642 80
	<hr/>
Amount unexpended,	\$857 20
	<hr/>

There have been located during the year 23 street-lights, at an average cost of \$20 each, making the whole number of lights at present 361.

There have been no accidents or serious damage to any of the posts or lanterns. The expenses above mentioned, aside from the amount paid for new work, have been for the actual running expenses.

J. J. UNDERHILL,
Chairman.

ANNUAL REPORT OF THE CITY CLERK.

ANNUAL report of the city clerk of the receipts of his office for the year ending Dec. 31, 1879, also the registration of marriages, births, and deaths for the period ending Dec. 31, 1879.

RECEIPTS ENDING DEC. 31, 1879.

For junk licenses issued in 1878,	\$6 00
“ goat “ “ “	9 00
“ swine “ “ “	15 00
“ grease license “ “	2 00
“ liquor licenses “ “	11 00
199 marriage certificates issued in 1879,	99 50
48 junk licenses “ “	96 00
44 liquor “ “ “	44 00
41 goat “ “ “	41 00
8 auctioneers’ licenses “ “	16 00
15 grease “ “ “	30 00
156 swine “ “ “	156 00
Fees for licensing dogs “ “	98 60
Recording mortgages and assignments in 1879,	153 25
	<hr/>
	\$777 35
	<hr/>

All of which has been paid to the City Treasurer, and his receipt taken for the same.

MARRIAGES.

Number of intentions issued in 1879,	199
More than last year,	26
Marriages registered,	203

NATIONALITY OF THOSE REGISTERED.

Both parties American,	117
Both parties foreign,	44
American groom and foreign bride,	16
Foreign groom and American bride,	21
Unknown,	5
	— 203 couples.

First marriage of	352 persons.
Second “	52 “
Third “	2 “
	—
	406 = 203 couples.
	—
Oldest person married,	69 years of age.
Youngest “ “	17 “ “

BIRTHS.

Number of births registered in 1879,	549
More than last year,	2
Males,	281
Females,	268
Born of American parents,	269
Born of foreign parents,	185
American male and foreign female,	22
Foreign male and American female,	70
Unknown,	3
Number cases of twins,	4

DEATHS.

Number of deaths in Somerville in 1879,	398
More than last year,	14

Ages.	Males.	Females.	Totals.
Under 10 years,	85	89	174
Between 10 and 20,	8	13	21
“ 20 “ 30,	9	22	31
“ 30 “ 40,	22	20	42

Ages.		Males.	Females.	s.
Between 40 and 50,		11	22	33
“ 50 “ 60,		14	19	33
“ 60 “ 70,		12	13	25
“ 70 “ 80,		8	13	21
“ 80 “ 90,		6	10	16
“ 90 “ 100,		1	1	2
				398

Oldest person deceased, male, 97 years.

NATIONALITY.

Born in Somerville,	154
Other places in United States,	168
Of foreign birth,	72
Unknown,	4
	— 398

The number of deaths returned by the undertakers was 384, and occurred as follows : —

January,	36	July,	38
February,	40	August,	46
March,	27	September,	27
April,	34	October,	35
May,	38	November,	27
June,	22	December,	28
— 398			

For classification of diseases, see report of Board of Health.

CHARLES E. GILMAN,
City Clerk.

CITY GOVERNMENT FOR 1880.

MAYOR.

GEORGE A. BRUCE.

Residence, Highland Avenue ; Office, City Hall.

ALDERMEN.

J. J. UNDERHILL, *President*.

WARD ONE.

MALCOLM B. COLE	.	.	.	.	Pearl Street.
ELIJAH C. CLARK	.	.	.	.	Ellsworth Street.

WARD TWO.

SEWARD DODGE	.	.	.	.	Union Square.
ABIJAH B. GOOKIN	.	.	.	.	Grand View Avenue.

WARD THREE.

SAMUEL M. PENNOCK	.	.	.	.	Sycamore Street.
JESSE J. UNDERHILL	.	.	.	.	Gilman Street.

WARD FOUR.

ASA DURGIN	.	.	.	.	Broadway.
MARTIN W. CARR	.	.	.	.	Cragie Street.

COMMON COUNCIL.

JOSEPH W. BAILEY, *President*.

WARD ONE.

MARK F. BURNS	.	.	.	.	Perkins Street.
JAMES RAWSON	.	.	.	.	Franklin Street.
HIRAM A. PRATT	.	.	.	.	Pearl Street.
EDWARD McHUGH	.	.	.	.	Fitchburg Street.

WARD TWO.

JOHN E. HILL	.	.	.	.	Union Square.
CALEB A. PAGE	.	.	.	.	Concord Avenue.
DENNIS F. FLYNN	.	.	.	.	Dane Street.
GEORGE B. CLARKE	.	.	.	.	Berkley Street.

WARD THREE.

THOMAS R. ROULSTONE	Bonair Street.
J. LELAND NORCROSS	Marshall Street.
WILLIAM T. HILL	Sycamore Street.
GERSHOM P. BURNHAM	Sycamore Street.

WARD FOUR.

JOSEPH W. BAILEY	Appleton Street.
WILLIAM E. WELD	Harvard Street.
JOSEPH A. CHABOT	Park Street.
WILLIAM E. SHEDD	Morrison Street.

JOINT STANDING COMMITTEES OF THE CITY COUNCIL FOR 1880.

ACCOUNTS — Aldermen Cole, Underhill; Councilmen Burns, Weld, and Hill (Ward 2).

BURIAL GROUNDS. — Aldermen Durgin, Gookin; Councilmen Hill (Ward 3), Pratt, and Flynn.

CLAIMS. — His Honor, the Mayor, *ex officio*; President of the Common Council, *ex officio*; Alderman Dodge; Councilmen Hill (Ward 3) and Rawson.

FINANCE. — His Honor, the Mayor, *ex officio*; President of the Common Council, *ex officio*; Aldermen Cole, Carr; Councilmen Hill (Ward 2), Shedd, Burnham, and Burns.

FUEL AND STREET LIGHTS — Aldermen Underhill, Dodge; Councilmen Roulstone, McHugh, and Weld.

FIRE DEPARTMENT. — Aldermen Pennock, Clark; Councilmen Page, Chabot, and Norcross.

HIGHWAYS. — Aldermen Durgin, Gookin; Councilmen Norcross, Pratt, and Clarke.

ORDINANCES. — Aldermen Carr, Cole; Councilmen Chabot, Flynn, and Hill (Ward 3).

PUBLIC PROPERTY. — Aldermen Dodge, Clark; Councilmen Burnham, Shedd, and Page.

PRINTING. — Alderman Cole; Councilmen Clarke and Chabot.

SOLDIERS' RELIEF. — Aldermen Dodge, Underhill; Councilmen Weld, Rawson, Hill (Ward 2).

WATER. — Aldermen Underhill, Gookin; President of the Common Council, *ex officio*; Councilmen Pratt and Roulstone.

STANDING COMMITTEES OF THE BOARD OF ALDERMEN.

SEWERS. — Aldermen Carr, Underhill, and Gookin.

ELECTIONS. — Aldermen Gookin and Pennock.

ENROLLED ORDINANCES. — Aldermen Clark and Pennock.

LICENSES. — Aldermen Pennock and Durgin.

POLICE. — His Honor, the Mayor, *ex officio*; Aldermen Clark and Carr.

STATE AID. — Aldermen Underhill, Gookin, Carr, and Cole.

STANDING COMMITTEES OF COMMON COUNCIL.

ELECTIONS AND RETURNS. — Councilmen Burns, Flynn, and Clarke.

ENROLLED ORDINANCES AND RESOLUTIONS. — Councilmen Roulstone, McHugh, and Rawson.

CITY CLERK AND CLERK OF BOARD OF ALDERMEN.

CHARLES E. GILMAN; Office, City Hall.

CITY TREASURER AND COLLECTOR OF TAXES.

AARON SARGENT; Office, City Hall.

CITY MESSENGER.

JAIRUS MANN; Office, City Hall.

CITY ENGINEER.

GEORGE A. KIMBALL; Office, City Hall.

CITY SOLICITOR.

SAMUEL C. DARLING.

CITY PHYSICIAN.

JOHN F. COUCH, Bow Street.

CLERK OF COMMON COUNCIL.

DOUGLAS FRAZAR, Summer Street.

AUDITOR.

DOUGLAS FRAZAR ; Office, City Hall.

CHIEF OF POLICE.

M. C. PARKHURST ; Office, Police Station, Bow Street.

SUPERINTENDENT OF STREETS.

JOHN P. PRICHARD ; House, 10 Cutter Street ; Office, City Hall.

CHIEF ENGINEER OF FIRE DEPARTMENT.

JAMES R. HOPKINS, Summit Avenue.

ASSISTANT ENGINEER OF FIRE DEPARTMENT.

NATHANIEL C. BARKER, Ellsworth Street.

SUPERINTENDENT OF SCHOOLS.

JOSHUA H. DAVIS, Myrtle Street.

BOARD OF HEALTH.

GEORGE A. KIMBALL, <i>Chairman</i>	.	.	.	Office, City Hall.
JOHN A. CUMMINGS	.	.	.	" "
JOHN F. COUCH ; residence,	Bow Street	.	.	" "
GEORGE I. VINCENT, <i>Clerk</i>	.	.	.	" "

MYSTIC WATER BOARD.

EDWARD FOOTE, <i>Chairman</i>	.	.	.	Broadway.
JOHN F. COLE	.	.	.	Perkins Street.
EDWIN S. CONANT	.	.	.	Pearl Street.
GEORGE F. STURTEVANT	.	.	.	Hawkins Street.
WESLEY C. CRANE	.	.	.	Summer Street.

SUPERINTENDENT OF WATER WORKS.

NATHANIEL DENNETT ; Office, Prospect Street.

COMMISSIONERS OF SINKING FUND.

NATHAN TUFTS, JOHN A. HUGHES, HENRY F. WOODS.

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WILLIAM VEAZIE.	ALBERT M. ROBINSON.
WM. H. BRINE.	THOMAS J. BUFFUM.
CHARLES S. LINCOLN.	

LIBRARIAN.

MISS HARRIET A. ADAMS.

ASSESSORS.

THOMAS CUNNINGHAM, <i>Chairman</i>	. . .	Oak Street.
FRANK G. WILLIAMS	. . .	Albion Street.
STILLMAN H. LIBBY	. . .	Elm Street.
GEORGE I. VINCENT, <i>Clerk</i> ; Office, City Hall.		

ASSISTANT ASSESSORS.

GEORGE SMITH, Ward One	. . .	Myrtle Street.
B. F. THOMPSON, Ward Two	. . .	Summit Avenue.
R. A. MELVIN, Ward Three	. . .	Bonair Street.
S. H. HOLLAND, Ward Four	. . .	Broadway.

OVERSEERS OF POOR.GEORGE A. BRUCE, *Mayor, Chairman ex officio.*

ANSEL LEWIS	. . .	Webster Street; Office, Police Station.
NELSON HOWE	. . .	Warren Avenue; " " "
FRANK G. WILLIAMS	. . .	Albion Street; " " "
THOMAS CUNNINGHAM, <i>Secretary,</i>		" " "

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CHARLES C. FOLSOM.	NEWELL F. CASWELL.
HORACE B. RUNEY.	ANSEL LEWIS.
WM. D. HAYDEN.	SAMUEL R. DOW.
WM. H. BRINE.	ROBERT R. PERRY.
C. C. CAVANAGH.	JOSEPH J. GILES.

FENCE VIEWERS.

JOHN C. MAGOUN, DAVID A. SANBORN, WARREN POLLARD.

POUND KEEPER.

CHARLES A. SMALL.

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ANSEL LEWIS, THOS. G. TEMPLE, S. T. LITTLEFIELD,
ALEXANDER WOOD.

SURVEYOR OF STONE WORK.

JAMES R. HOPKINS.

SURVEYOR OF STONE, BRICK, AND PLASTER WORK.

A. M. SIBLEY.

SURVEYOR OF MECHANICS' WORK.

CHARLES D. ELLIOT.

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DANIEL W. DANFORTH, PATRICK O'BRIEN, ALEXANDER WOOD.

UNDERTAKERS.

HORACE B. RUNEY.	HORACE D. RUNEY.
A. L. SANBORN.	PATRICK RAFFERTY.
PATRICK H. RAFFERTY.	WM. A. FLAHERTY.

LOCK-UP KEEPER.

MELVILLE C. PARKHURST.

FIELD DRIVERS.

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JUDSON W. OLIVER.	ISAAC S. CAMPBELL.
JOHN E. FULLER.	JOHN HAFFORD.

ALBERT FISK.

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M. C. PARKHURST, *Chief*.R. R. Perry, *Captain*.S. R. Dow, *Sergeant*.C. C. Folsom, *Sergeant*.

N. F. Caswell.

George W. Bean.

C. C. Cavanagh.

S. H. Whitcomb.

S. C. Rollins.

P. W. Skinner.

John E. Fuller.

S. A. Brown.

Howard Lowell.

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Ivan Loughton.

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I. S. Campbell.

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J. B. Young.



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